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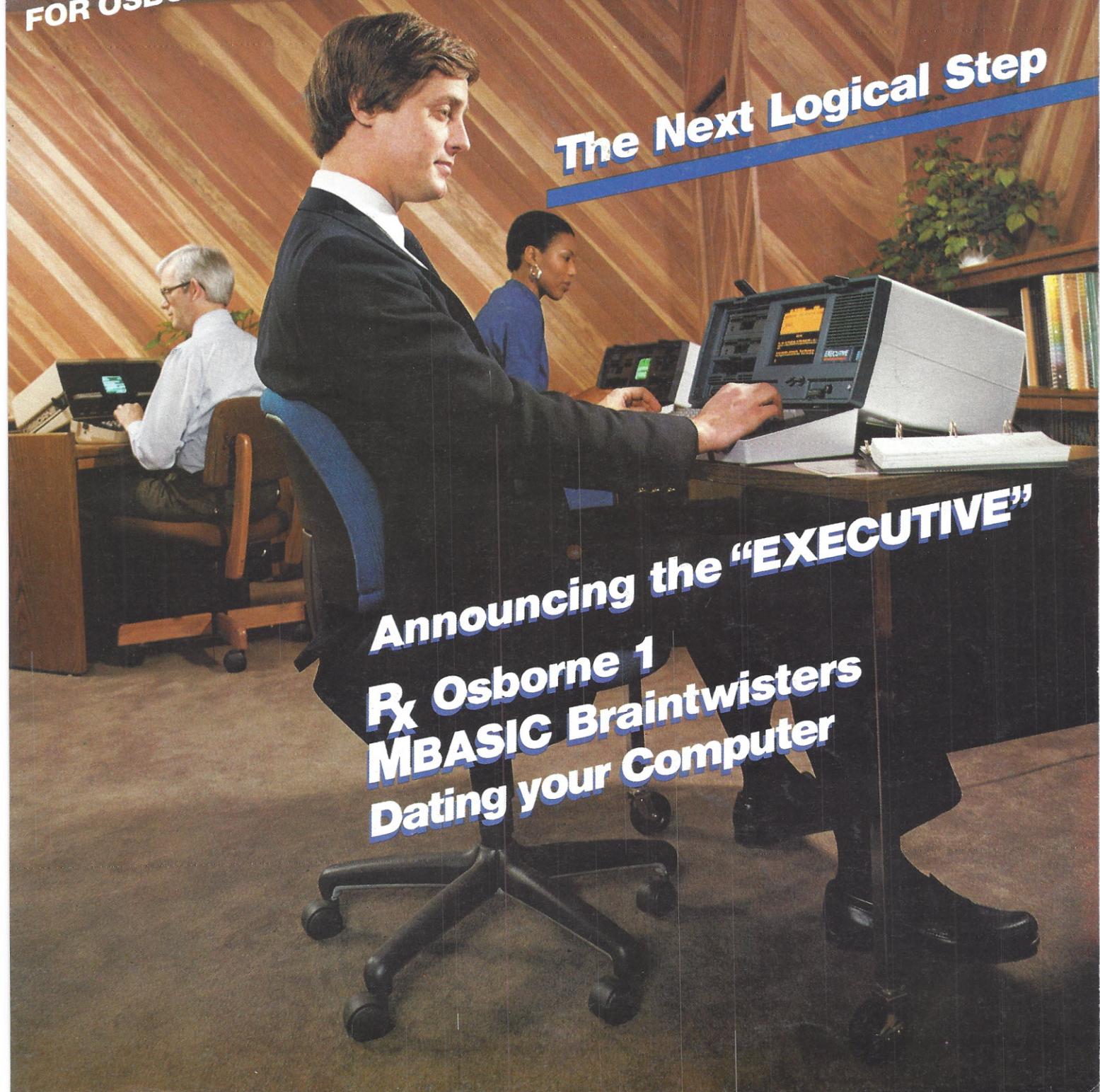
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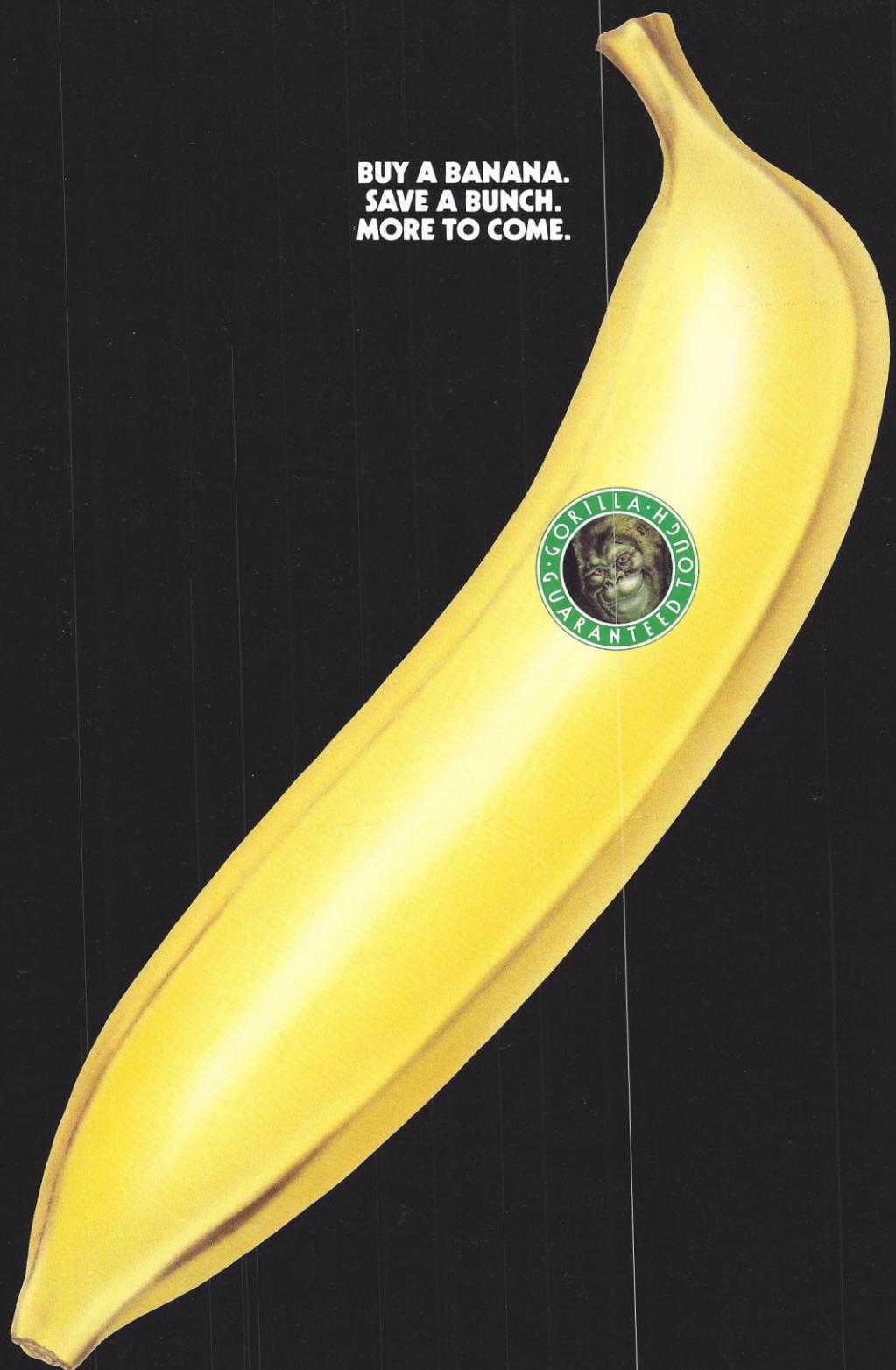
June

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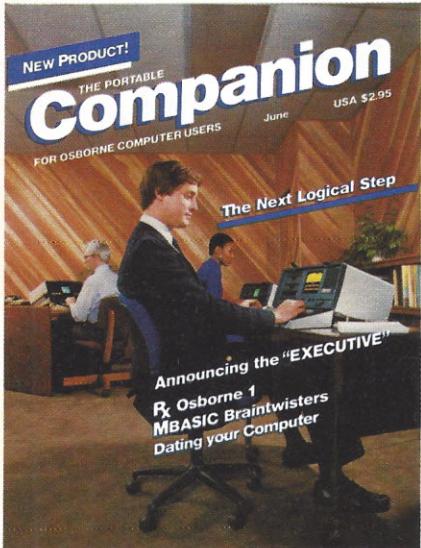
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The versatile Executive can shake hands with any of the big boys on the block. Mark Compton's comprehensive look at OCC's newest product begins on page 27.



3-D graphic applications. Page 44.



Baby boon. Page 39.

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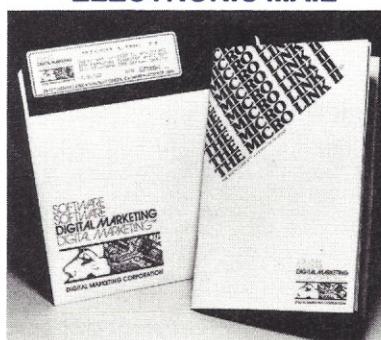
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The Next Logical Step

Well, here it is. We thought you'd like a first-hand look at OCC's latest entry in the microcomputer race. The details on development and release of the new "Executive" are silhouetted in the story on page 27. The new specifications and features are also described.

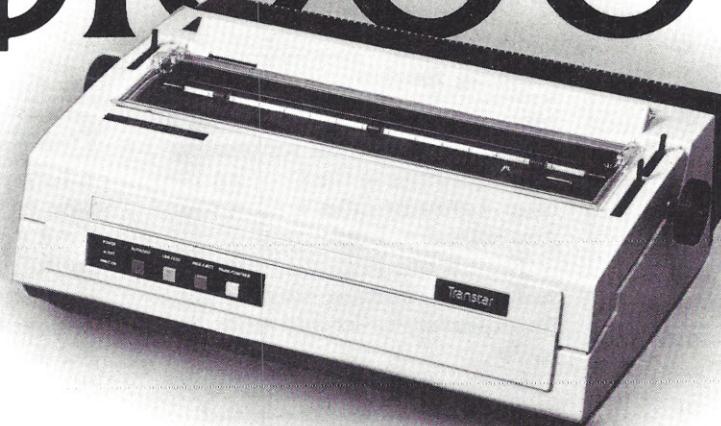
So, what does this mean to you? As Osborne 1 owners, we hope you'll appreciate the fact that OCC listened to all your suggestions for improvements to the computer and implemented many of them in the Executive. If you choose to become a "two Osborne family," your data diskettes will be compatible with the Executive. In addition, most of the approved software programs for the Osborne 1 will be available for the Executive.

As with any new product, there are technological improvements included with the Executive that were not provided on the Osborne 1. Fortunately, there are a number of industrious vendors out there cooking up new ways to customize and enhance the value of your Osborne 1. You are a strong force and will continue to be so in the future. Watch the pages of this and other computer magazines for the latest hardware and software developments for the Osborne 1.

And finally, be assured you will continue to receive top priority within the pages of *The Companion*. As the list of Osborne owners grows, the magazine will focus on issues generic to all Osborne computers as well as specific applications for the Osborne 1.

Jackie Rae
Editor

Is 42 seconds worth \$1000?



The new Transtar 130 daisy wheel printer generates a full-page letter in 78 seconds. The least expensive 40 cps printer does it in 36. Only 42 seconds difference...for twice the price.

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Letters

Place Your Bets

I'd be willing to bet that if you asked how much interest there is in the premiere issue (June/July, 1982) you'd get enough response for a second printing.

Bob Heck
Los Angeles, CA

All readers interested in a second printing of the premiere issue are invited to send word to the Companion, Mailbox 20, 26538 Danti Court, CA 94545, Attention: Editor. If the response is great enough to make the project financially feasible, we'll certainly consider it.

Finishing Touches

Many thanks to Scott Rainey for his article on using XDIR for creating disk directories in the Dec/Jan 1983 issue. I am sure other readers found it as helpful as I did.

There is one suggestion I would make which I believe would make the procedure easier and more useful.

Instead of merely identifying the diskette with a number (-001), I would use "XDIR B:.*.*B -(001)". This not only puts the diskette number into the directory track but the disk directory as well.

Also, to facilitate editing, instead of using the "DD" diskette, I use WordStar, booting it in Drive A, placing the diskette for indexing in Drive B, logging onto Drive B and then editing a new directory on the WordStar diskette named "DISKDIR." I then merely read the disk directory on Drive B (^ KR -001.DIR). There is a small, but generally sufficient amount of space on the WordStar diskette if you delete the file SAMPLE.TXT.

Insert the next diskette and repeat the procedure (^ KR -002.DIR). One should save (^ KS) frequently



in case the WordStar diskette is close to full. If the diskette does fill up, put the "DD" diskette in Drive B and copy the directory information. Then erase the directory in the WordStar diskette and start a new one.

Marcel Shwergold
New York, NY

Program Runoff

A handy trick most WordStar users have to find by accident is use of the R option from the no-file menu for running programs not usually considered a part of WordStar.

Any .COM file can be accessed in this way, whether or not it's currently on the WordStar diskette. For example, if PIP is not on that diskette, you can invoke it by selecting R, typing PIP.COM in response to the Command? prompt, and inserting the CP/M diskette in Drive A before pressing RETURN. You can then remove the CP/M diskette and use PIP to copy anything from Drive A to Drive B. (You must be logged onto B before leaving WordStar. When copying is complete, simply replace WordStar in A, press RETURN to exit from PIP and press any key to return to WordStar.

The ability to run programs without exiting WordStar is particularly useful if you have it set up for special copy formatting, as it allows you to return to work without having to reset the format-

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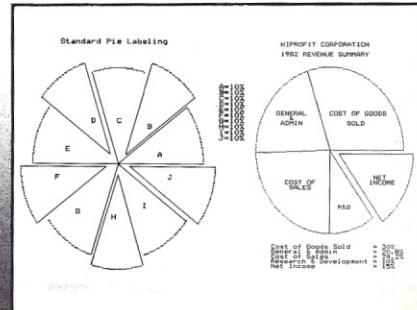
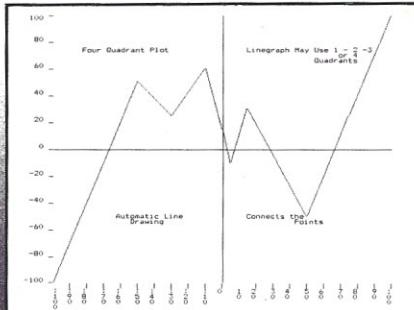
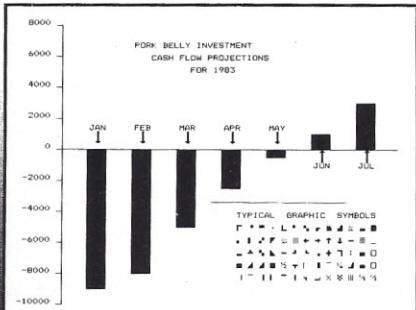
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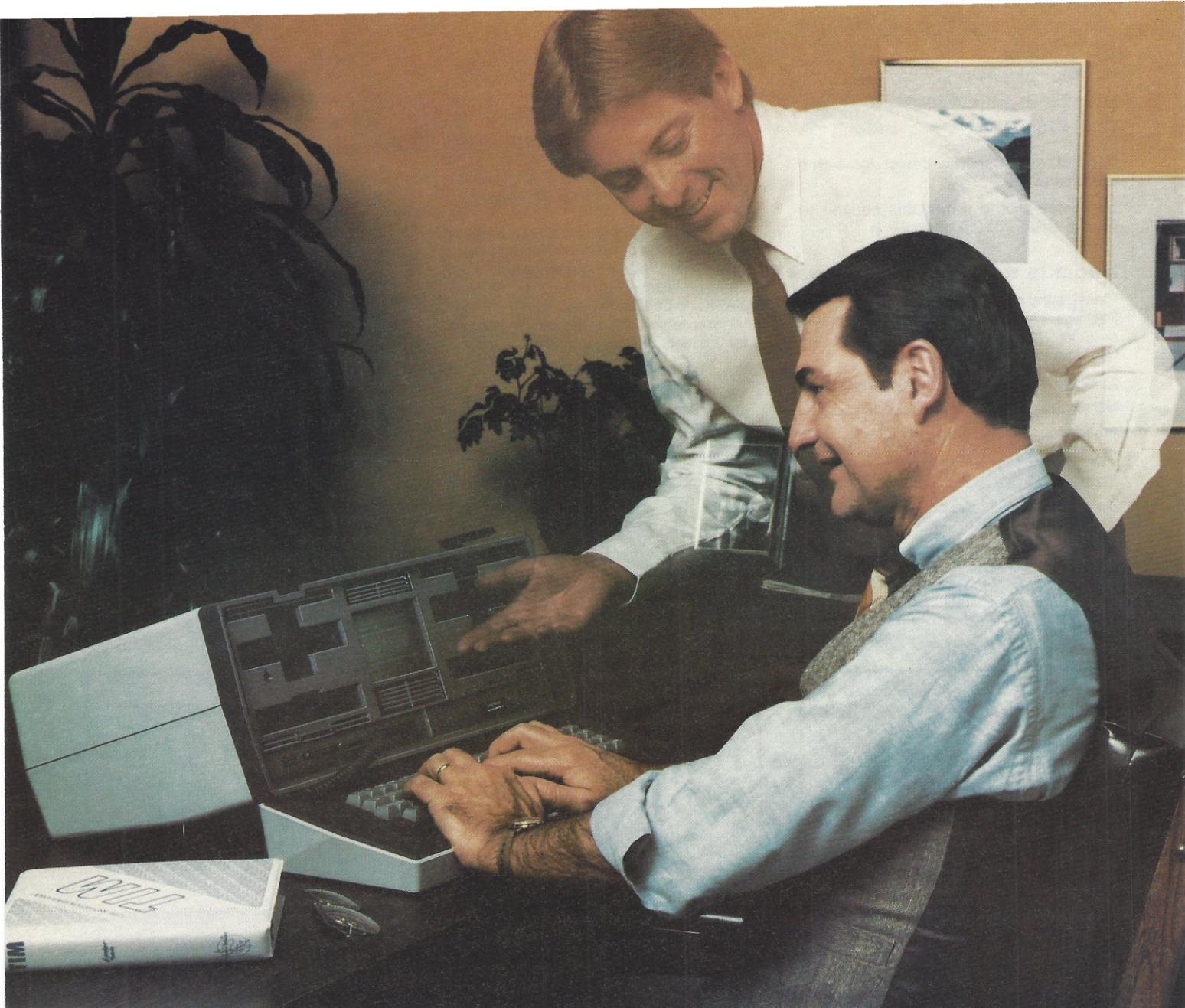
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ting parameters (as is necessary if you reboot *WordStar*).

The "X" (exit to system) option could be used for running other programs, but returning to *WordStar* by calling it out from *CP/M* does not re-load the special function key commands. It's apparently necessary to re-boot from scratch to restore these.

J. Gordon Holt
Santa Fe, NM

Phone Messages

I have been receiving the *Companion* since it started and have found it very helpful. One article actually got me started in *BASIC* programming.

The modern articles in the Dec/Jan issue were also very interesting. But there are a couple of things that should be added.

First, Ma Bell has a peculiar tendency to require all direct-dial station-to-station long distance numbers to start with the number "1." This means the PHONE.NUM file on the AMCALL diskette needs to be altered if you want the computer to dial from the file for you.

Also, if any of the RCP/M numbers happen to be within your area code, you'll have trouble. Even if you've added "1" to the long distance numbers, you probably won't get through. Ma Bell has an error message informing you it's unnecessary to dial the area code to reach a number in your zone. The computer reads this message as a busy signal.

Another thing that can really screw you up is call-waiting. If this is a feature on your phone, cancel it or get a separate phone line for your modem. When someone calls, the two beeps put out to alert you that someone's waiting on the line are misinterpreted by the terminal.

Cheryl Peterson
Miami Beach, FL

Help Wanted

Let's think about increasing the demand for Osbornes by making them more useful and thereby more attractive. How can we do that?

Perhaps by increasing the supply

of available software. It would be good to help programmers figure out the market. You should encourage people to write to the *Companion*, telling you their software needs. Publish a listing of these needs and sell advertising space or your mailing list to software suppliers.

Here's a request to get you started: "WANTED: To run on an Osborne . . . One Scholastic Achievement Test tutorial program (currently available only for Apple II and TRS-80 computers from Harcourt, Brace, Jovanovich).

Paul A. Dawson
Professor of Government
Oberlin College
Oberlin, OH

The Mark of Sorcim

In the Dec/Jan issue of the *Companion*, there was an article by Manny Juan on a particular use of the *SuperCalc* program. In it he mistakenly called the "!" key the "answer key." Also, no trademark appeared for the *AnswerKey*.

The *AnswerKey* is trademarked by Sorcim Corporation and refers to the "?" key used to summon the help screen (the *AnswerScreen*). In the interest of your readers we respectfully request you print a correction. With respect to trademarks, we request that you recognize your duty to honor our trademarks in all future publications.

Richard Frank
Sorcim Corporation
San Jose, CA

Trademark information is included in each issue's masthead. By publishing convention, magazine articles are generally left free of trademark footnotes.

*No infringement of right was intended in Mr. Juan's use of the term "answer key." His play on words referred only to the "?" character—not Sorcim's program. It might be argued that more care could have been used in selecting the term, but the aim of Mr. Juan's article was to assist readers in making better use of both the computer and *SuperCalc*. We feel this to be as much in the interest of Sorcim as The Portable Companion. We will, however, keep an eye open to trademark concerns in the future.*

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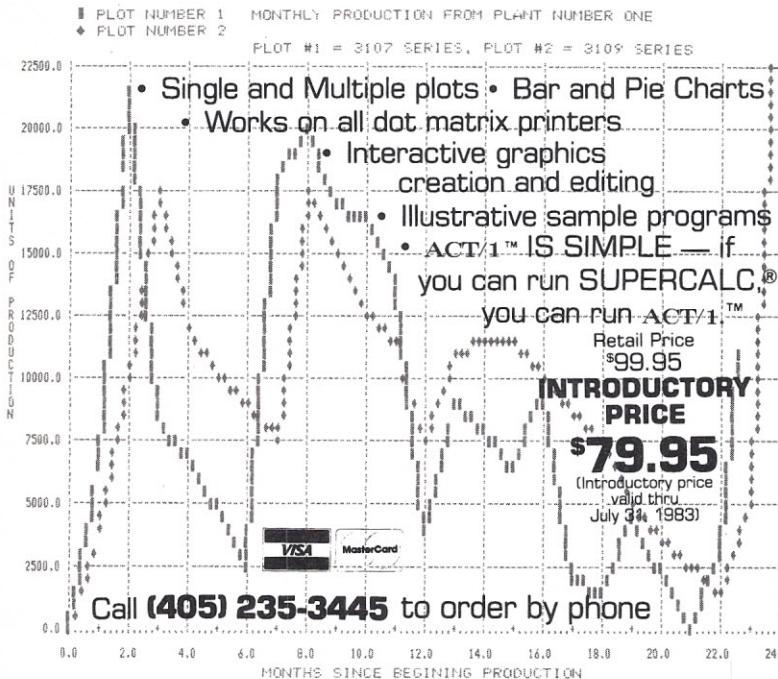
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Down on Upgrade

Please excuse the handwritten nature of this letter. Being the owner of a daisy wheel printer, I certainly am not accustomed to sending business correspondence written on yellow engineering paper. At least I wasn't until the end of January. That is when I sent my Osborne 1 to the factory for the double density and 80-column screen enhancements. According to the original notice I received from OCC, these modifications were to take a total of two weeks to implement, including shipping time. My machine was scheduled to be processed on January 26, so I dutifully brought it to my dealer with ample lead time for shipping. As of today, March 8, I am still waiting. My wife and I are both computer professionals. I'm not talking about a computer which was used to play games!

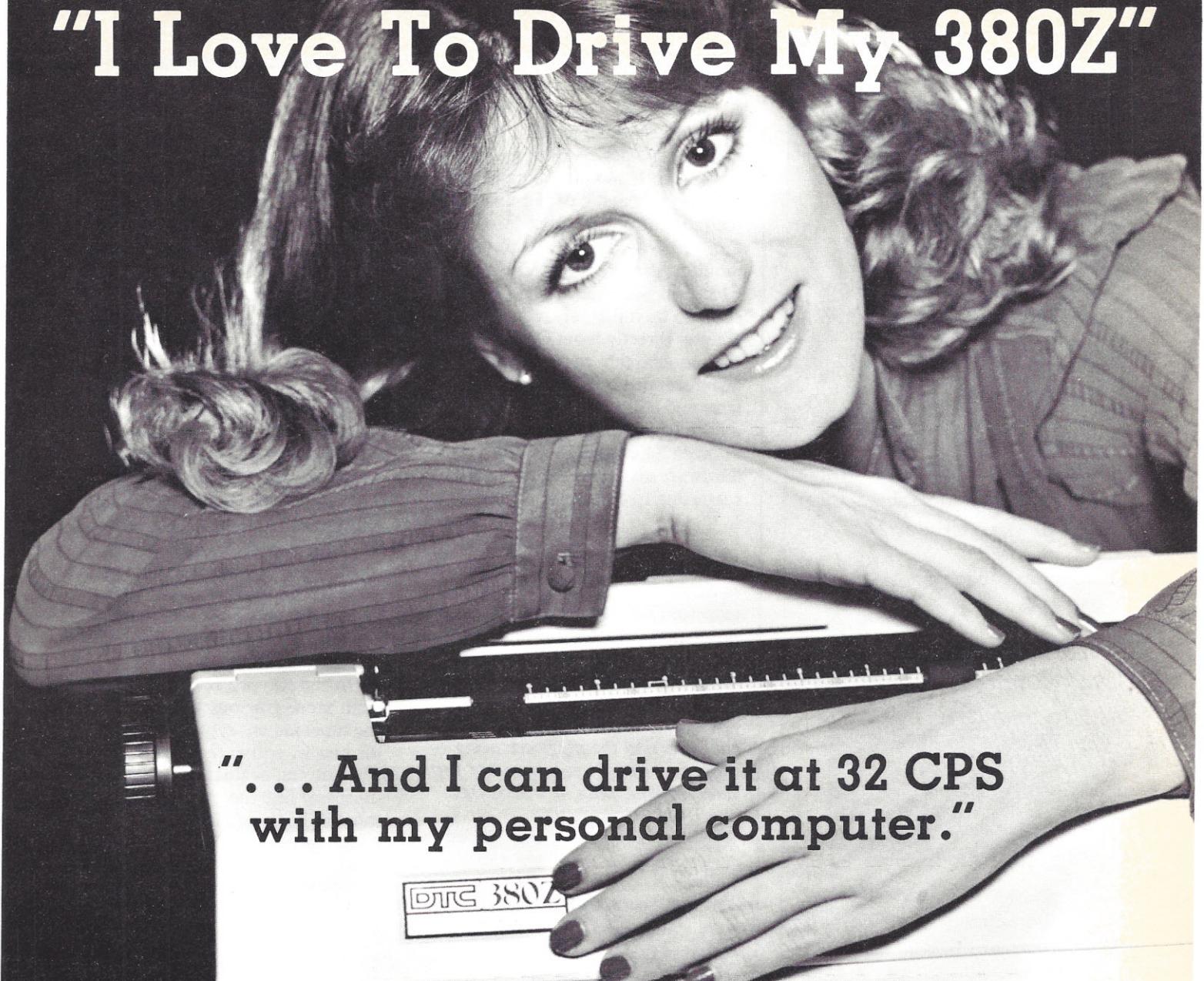
My outside consulting work brings me approximately \$200 every week. When I budgeted a three-week break from my machine into my consulting schedule, I thought I was being generous. After seven weeks, OCC owes me at least four weeks worth of lost revenue—amounting to almost twice what I have already paid in advance to have the modifications made. In addition, I have expensive peripheral equipment sitting idle, and I'm spending extra time on correspondence such as this without the benefit of a word processor.

Osborne owners beware! Remember Adam Osborne's own advice to never put out money for anything that you do not have in your hands.

Metro T. Sauper, Jr.
Columbia, MD

I thought I would send this letter to express my feelings about the recent upgrade on the Osborne 1. Please excuse the poor penmanship and error-prone spelling as I no longer have a usable word processor. I decided to purchase the 80-column and double density options to get maximum usage from our Osborne 1. Unfortunately, Mr. Osborne failed to mention that the "upgrades" would obsolete my Osborne external

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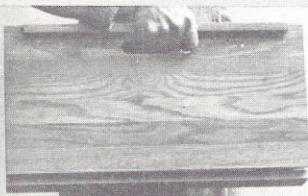
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monitor. Upon receipt of the machine from OCC I found that an adapter was now required to use the external Osborne monitor. A call to the Osborne dealer, Microcomputer Systems in Honolulu, requesting an adapter, schematic or pin-outs to the monitor or any other information that would enable us to use the monitor, proved futile. The answer I received was that I would be sent a card, to be filled out, requesting an adapter directly from Osborne but that no adapters were presently being shipped. (Incidentally, one week later and still no request card.) It is a little frustrating to have spent between \$4,000 and \$5,000 on the hardware and software and now regressing to handwritten letters.

Rolland Moran
Kaunakakai, HI

We apologize for the inconvenience to SCREEN-PAC owners who own external Osborne monitors and have not yet received the monitor adapter plug. We experienced a four-week delay when the only source for the connector used on the plug could not deliver us parts. We now have the parts and the plugs are being manufactured. If you have not yet received your plug, it will be there shortly.

Jim Schwabe,
Product Manager

Keeping Up-graded

I read the article about Update-PAC in the *Whoops* section of the Dec/Jan *Companion* and have several questions.

If I had not subscribed to your magazine, how would I have known of these new upgrades? I received no notification of the new releases.

I am interested in keeping up with the latest modifications to my Osborne 1.

Samuel L. Schmick
East Lansdowne, PA

OCC generates a mailing list of end users from warranty cards provided at purchase. Dealers and end users alike are vigorously requested to return these cards. If they do not, we have no other way to keep track of our purchasers. Therefore we again emphasize: Send in those warranty cards! We have added Mr. Schmick's name to our mailing list via our User Registration department, and suggest that other users

in similar circumstances contact that department.

The Kaypro Pucker

Your dedicated magazine is a fine aid in using and expanding the use of the Osborne 1, and serves well in keeping up with the latest developments. I find myself going through it to check out the articles, then again to see what the ads have to offer.

The only blemish on an otherwise well-done magazine is the occasional heavy dose of sour grapes that sneaks into some of the articles. Two examples are "The Colorful Strobe Plotter" in the Aug/Sept 82 issue, and the review of the Kaypro on page 81 of the Feb/Mar 83 issue.

In any review I would prefer reading of the abilities and limitations of the item offered: what it does, how well it does it, what it doesn't do, and how much trouble it is to use.

On the Kaypro review it would seem more gracious to have ignored the machine entirely rather than dismiss its software or other points without real evaluation. A dogmatic dismissal like the one printed seems more at home in Holy Iran. Most of your readers are dedicated Osborne 1 users and verbal sneers at the competition seem unnecessary.

The *Companion* is a great asset to Osborne and its users, and I hope you maintain the high quality as well as a positive tone in the articles and evaluations.

Ron Matviyak
Fairbanks, AK

Touche.

Amazing Assemblages

It is amazing how much there is yet to learn about the capabilities of microcomputers. Thanks for the article about how to make MailMerge work as a paragraph assembler (Feb/Mar 83 *Companion*).

I only wish it had been easier for a neophyte like me to read. Also, wouldn't a database work better since the field can be 1000 characters and it is easier to sort?

Brad Baldwin's writing style

continued on page 90

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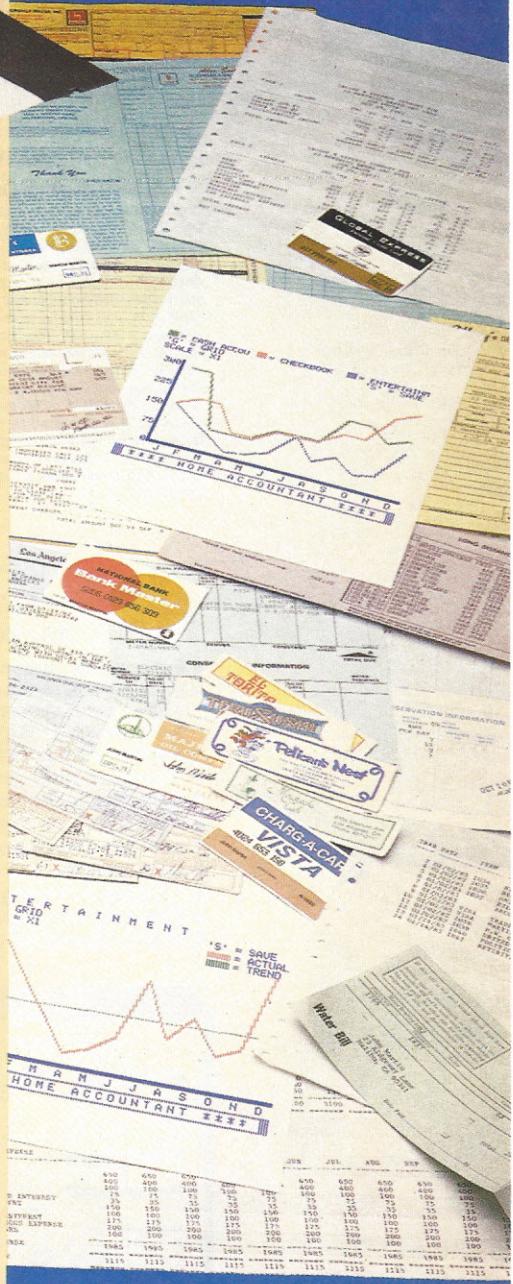
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FEATURE COMPARISON CHART

FEATURE	VENDOR: TRADE NAME:	Rocky Mountain Software Systems Desktop Accountant	Peachtree Series 4	TCS Big Four	Business- master, Inc. Business- master Plus	RSN Enterprises Osborne/ McGraw-Hill Basic Accounting
Price	\$395	\$595 to \$1,800 Depends on Dealer	\$200 to \$1,200 Depends on Dealer	\$289	\$416	
Includes Payroll	YES	NO	YES	YES	YES	
Fully-Integrated	YES	YES	YES	YES	NO	
Ready-to-Run	YES	YES	YES	YES	YES	YES
Audio Cassette Tape Start-up & Training Aid	YES	NO	NO	NO	NO	NO
System "Road Map" Guide	YES	NO	NO	NO	NO	NO
Free Users' Newsletter	YES	NO	NO	NO	NO	NO
Source Code Included At No Extra Charge	YES	NO	YES	NO	NO	
Telephone "Hot Line" Support Service	YES	YES	Depends upon local dealer	YES	Depends upon local dealer	
Sample Data Files for Practice & Training	YES	YES	YES	YES	NO	

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- Tracks sales, receipts, returns and reserves.
- Stores and sells fractional units.
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- Item keys can be any printable character.
- Complete audit trail.
- PRICE:** \$295, includes full support and 220 pg. manual. Not available for single density systems.

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5. Itemized Monthly Transactions
6. Balance Sheet
7. Balance Sheet with prior year comparison
8. Income Statement
9. Income Statement with prior year comparison
10. Departmental Income Statement(s)
11. Departmental Income Statement(s) with prior year comparison
12. Detail report for individual accounts
13. Trial Balance Statement

Accounts Receivable

1. Daily Transactions Report
2. Invoices (with or without pre-printed forms)
3. Statements (with or without pre-printed forms)
4. Summary Aging Report
5. Detailed Aging Report
6. Itemized Monthly Transactions
7. Detailed Cust. Activity Report
8. Summary Cust. Account Report

Accounts Payable

1. Daily Voucher Report
2. Daily Credit Report
3. Checks with Detailed stubs
4. Check Register
5. General Ledger Transfer Report
6. Cash Requirements Report
7. Transaction Register
8. Open Voucher Report
9. Aged Payables Report
10. Detailed Vendor Activity Report
11. Summary Vendor Account Report

Payroll

1. Federal Tax Tables
2. State Tax Tables
3. Payroll checks with stubs
4. Payroll Check Register
5. Monthly Payroll Summary
6. Quarterly Payroll Summary
7. Gen'l. Ledger Transfer Report
8. Detailed Employee File Listing
9. 941 Worksheet
10. W-2 Forms Printing

SYSTEM CAPACITIES

Module	SD	DD	5Mb	10Mb	15Mb
General Ledger					
Accounts Transactions	100	200	400	400	400
500		1,000	6,000	12,000	18,000
Accounts Receivable					
Customers Transactions	200	400	400	400	400
400		800	6,000	12,000	18,000
Accounts Payable					
Vendors Transactions	200	400	400	400	400
400		800	6,000	12,000	18,000
Payroll					
Employees	200	400	400	400	400

SYSTEM REQUIREMENTS

Requires either CP/M® or MS-DOS (PC-DOS); MBASIC for CP/M®, BASIC for MS-DOS: 56K to 64K RAM; 2 Disk Drives or Hard Disk; at least 200K of Mass Storage (we recommend more); 132 column printer (an Epson MX-80 or similar printer with compressed mode is acceptable); call for exact requirements on specific systems.

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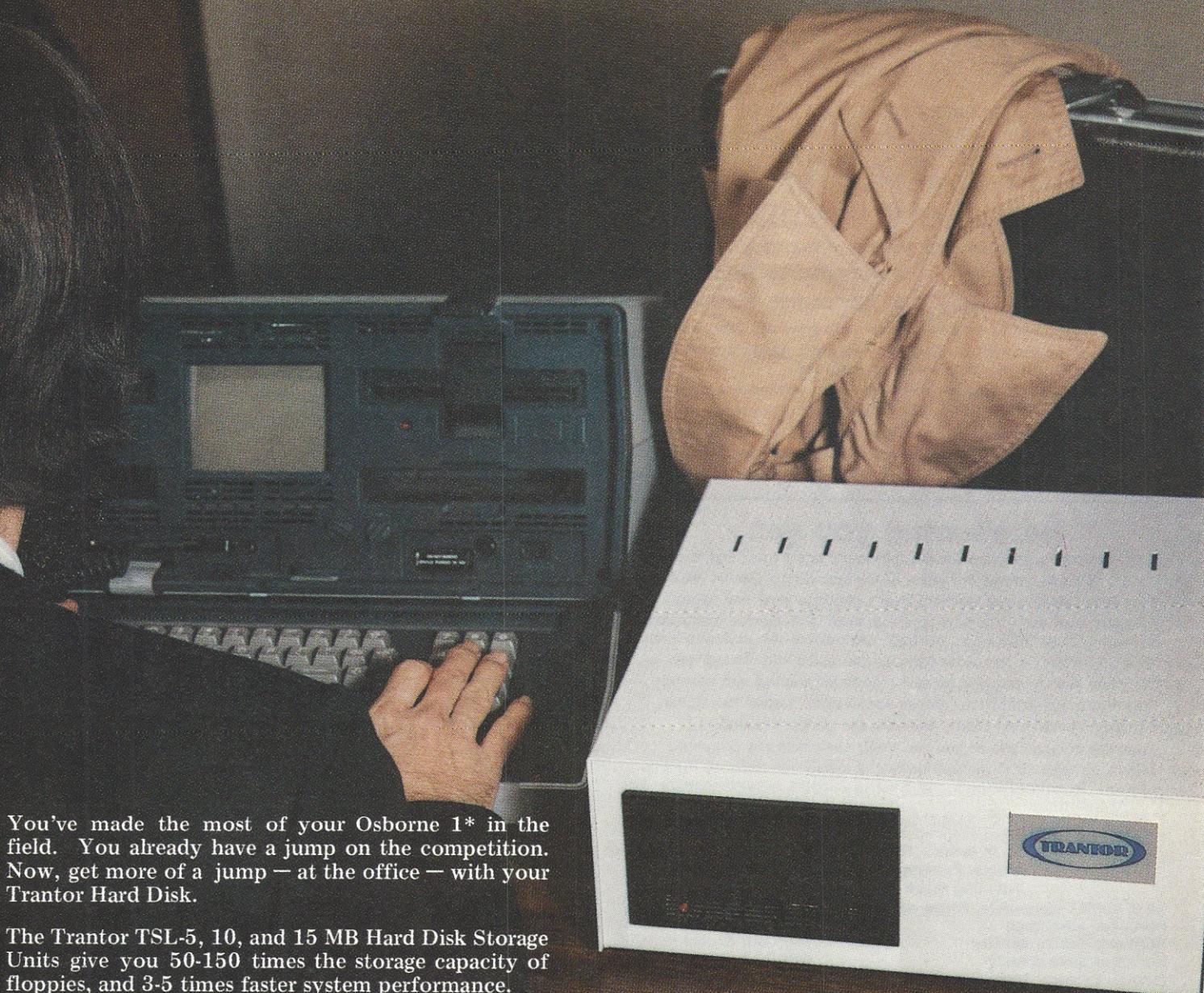
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Adam Osborne

The Osborne "Executive"

The Osborne Executive embodies many of the philosophies I believe are imperative to any microcomputer manufacturer's long-range success.

Above all, a product must be convenient to use. It is imperative, given the nature of the microcomputer industry, that each new offering provide better price and performance; however, it is becoming equally important for the product to be reliable and easily serviced.

First consider the subject of user convenience. Physically, we have gone a long way with the Executive towards resolving all the perceived inconveniences of the Osborne 1; notably the small screen and the 52-column display. We also included graphics, plus an amber display, since many studies in Europe have shown this to be the least eye-straining color.

Many users may not fully appreciate the advantages of extensive communication capabilities, but for those who do we added an additional Input/Output Port (called Synchronous Serial I/O for those of you who are technically inclined). This enables the Executive to tie in with most of the computer networks

used throughout the world today.

But standardization will be the most important convenience feature of microcomputers in years to come. Just as the video cassette world will soon be standardizing to the VHS format, the microcomputer world will also standardize. For 8-bit microcomputers the standard is very clearly *CP/M*. *CP/M* has established itself and is not about to be dislodged. In the 16-bit world it is clear that IBM will establish the standards for the future. We do not plan to fight IBM (as certain competitors have decided to do), that would not be in our customers' best interests. We intend to support IBM by following their standards. That is why an IBM-compatible version of the Executive will be available sometime in the near future.

When it comes to value for money, if you add up all of the new hardware and software features in the Executive, it clearly offers a great deal more for the dollar.

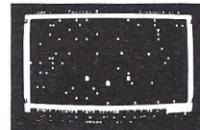
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Starbase Commander uses Osborne graphics to show 'Klang' alien battle cruisers maneuvering to attack your starbase, firing lasers. The more you fight back the harder they attack. Your fighters have two weapons, controlled by separate keyboard keys, but watch the radiation level.

You decide where to launch your fighters. Then clear a sector of enemy battle cruisers and launch a robot refueling ship to resupply your fighter before you run out of fuel or weapons. There is even a 'help' screen.

Starbase Commander has the imaginative quality of an adventure game with the fast action graphics of an arcade game. Order yours today.

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If you lose Starbase Commander you will be captured by the evil 'Klang' aliens. Win freedom from your captors by defeating a series of increasingly hostile gladiator robots in our Robot Gladiators game. Win and become a prince, lose and become a slave.

Both games, Starbase Commander and Robot Gladiators, run in fast machine language. The instructions are on the game disk.

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The Wizard

"Bloodless little wizards"

Brad Baldwin

That's what Morley Safer dubbed personal computers in general in a 60 Minutes broadcast aired several months ago. Safer was expressing a certain fundamental fear—a fear of high technology wizardry—otherwise known as "technophobia."

Adam Osborne pointed out to Safer that there is no more need to understand the internal workings of a computer in order to operate one than there is to understand how an internal combustion engine works to drive a car.

Perhaps, but the pleasure and enjoyment of owning a fine automobile is enhanced through the understanding of its finer technical details. So it is with the computer. It may take time, but eventually fear is replaced with knowledge.

So take the time to slowly read through the Osborne manual (and your printer manual!)—don't feel the need to understand it all in one sitting. You may find it helpful to gather additional resource material—many excellent books are available through computer stores.

Experiment. Explore new territory. Learn the logic, strategy and principles that lurk somewhere

behind this bloodless wizard, the Osborne 1. All of us have the capability of becoming "Wizards of Osborne"—we only need to invest a little time and effort.

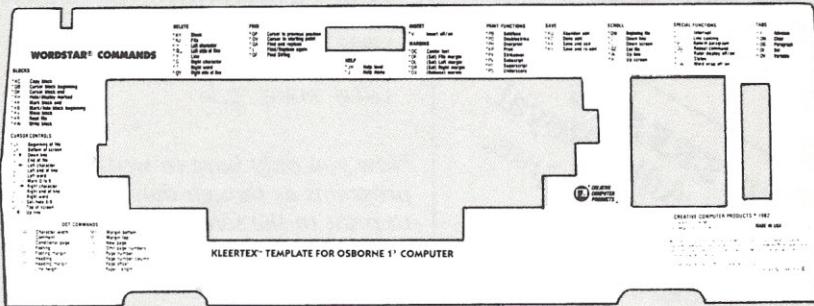
Q: I am experiencing an annoying problem with MBASIC. I like to debug a program by writing it to the screen using PRINT statements, but afterwards I require printer output using LPRINT statements. I have been unable to find any simple method to do this other than editing each PRINT statement and making the change to LPRINT. This of course precludes output to the screen; future changes to my program means arduously changing the LPRINT statements back to PRINT for debugging. Is there a simpler way?

A: Amazingly enough, the very next letter in my stack of mail came from someone with the answer to just that question.

Scott Lent of Pickerington, Ohio, submitted a brilliantly simple MBASIC subroutine that POKEs CP/M's IOBYTE. His instructions are as follows:

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Identify the line in your program where the output begins (where the PRINT statements are).

Immediately prior to that section, insert a GOSUB to the print-out subroutine that follows. Then, in an appropriate location in your program, insert the following subroutine:

```
1000 PRINT CHR$(26)
1010 INPUT "SEND TO PRINTER? YES=1 NO=2"; R
1020 IF R = 2 THEN 1070
1030 PRINT: INPUT "PRINTER TYPE: SERIAL=1 PARALLEL=2"; R
1040 PRINT: PRINT "ALIGN PAPER. PRESS 'RETURN' WHEN READY."
1050 INPUT A$
1060 POKE 3, R
```

Now you only have to write your programs as though they were going to print to the screen and you can take your choice of whether or not you want hard copy of the program results each time you run it. One final note: The POKE statement in the subroutine disables the keyboard from input. So, immediately after the last PRINT statement in the output section of your program, insert the following line:

POKE 3, 128

If you don't use the hard copy option, this line won't hurt a thing.

As you can see, an extra benefit of Scott's program is the ability to write to a serial or parallel printer from within the program itself.

Q: I have a Diablo 1620 strapped for 1200 baud. I am letting CP/M handle the ETX/ACK protocol and have run the INSTALL program for the 1610/1620. My problem is this: I cannot print WordStar files if I specify a character width (using either .CW or ^PA) other than the default value. If I try, I get a few lines of output, followed by an error signal, after which the printer goes haywire. All other features—bidirectional printing, microspace justification, super/subscript—work but only at 10 characters per inch. Any clues?

A: The Diablo 1610/1620 daisy wheel printers are fairly ancient; running 1200 baud and using a communications protocol inhibits

the use of the default CP/M List Output Device. Here's why:

With ETX/ACK protocol, *WordStar* sends an "End Of Text" character after each line. After printing all characters up to the ETX, the printer sends an ACKnowledge character back to the Osborne 1—indicating to send another line of text. Most printers do not have any problems in handling this protocol; obviously, the Diablo 1620 does.

The fix is simple. Run INSTALL and specify the CP/M Secondary Console Printer Driver (CRT:). This alternate driver accesses the "CRT:" console device allowing inputting characters from the printer, and supports the ETX/ACK protocol. Also, set *WordStar*'s protocol to ETX/ACK (along with the ETX/ACK installed during SETUP). If your printer continues to have buffer overflow problems after all this, bury it.

Q: The chart of *WordStar* labels in an article in the Dec/Jan issue is just what I have been looking for. Could you please publish a complete list of labels?

A: I have the complete list of labels with comments before me. It's 100 pages long, copyrighted, and would obviously fill an entire *Portable Companion*. We'll continue to publish information on customizing *WordStar* (last issue's I/O, I/O article gave all the printer labels); however, we are unable to comply with your request to publish all of the labels in one fell swoop.

"The Great and Wonderful OZ Speaks!"

The Votrax™ Personal Speech System is an RS232 device which does amazing things for your Osborne™. Primarily it is a highly articulate speech synthesizer available for the Osborne™. It looks like a printer to the computer, so there are no great software hoops to jump through to get it to do the basics. Speech, music and sound effects are only an LPRINT statement away.

Businesses will appreciate spoken data transmission, narration of graphic displays and unmanned, oral product demonstrations. School children can receive comprehensive computer instruction and quizzing with software currently available. And then, late at night, you can make those adventure games come to life!

In addition, I imagine most of you have been thinking about a printer buffer to end your print time blues. Hold on! The Votrax™ PSS has a 3,500 character input buffer which is subdivisible for a printer buffer!

- ★ 64 amplitude levels.
- ★ 8 octave, 3 note music synthesis.
- ★ Simultaneous speech and music ability.
- ★ Software accessible real time clock!
- ★ Internal speaker and external jack.
- ★ 8 user definable alarms.
- ★ Oral power up and error prompting.

Portable Software offers the following package:

- ★ Votrax™ PSS
- ★ Cable (you'll need one)
- ★ "OSMOUTH" Software to easily access Votrax

\$400.00 plus \$4.00 shipping

O-4 Joy Interface

\$39.95

An interface to any Atari joystick, compatible with ANY software which uses the Osborne arrows keys? Wow! You can use this interface with WordStar™, SuperCalc™, dBase™, AND any game which uses the arrow keys for movement and the space bar to fire. This interface requires NO additional software. It piggy backs in the keyboard port of the Osborne™, and looks like you're pushing down the arrow keys while allowing full and simultaneous access to the keyboard.

Printer Special

We would like to change your mind about printers. We want to introduce you to the Gemini Printer from Star Micronics. It has ALL the print features of the Epson with Graftrax PLUS:

- ★ 100 CPS! (to Epson's 80)
- ★ 2.3 K Memory buffer! (to Epson's 0)
- ★ 100% duty cycle (no waiting!)
- ★ 6 Month Warranty! (3 mo. on print head)
- ★ Friction, Tractor, or Roll Feed Standard
- ★ Uses \$1.50 Ribbon (to Epson's \$12)

Our price for the Gemini INCLUDES a cable configured for your Osborne, the Gemini 10 (10" carriage) and our "ARTIST II" program which will allow you to easily access the Osborne screen graphics and print them just as they appear on the screen. Graphs, charts and drawings are quick and easy. This package sells for hundreds less than most places charge for an Epson alone.

\$499 includes: Gemini 10
Cable for Osborne IEEE
"ARTIST II" Software for graphics access

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PRINTER STAND

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- Built-in shelf provides space for manuals
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Here are several of the more interesting *WordStar* 2.26 labels left off the list last time:

Label **Address** **Default**

WID: **0249** **50**

Sets screen field length.

Present value 80 columns.

6E = 110 columns

73 = 115 columns

7D = 125 columns

HZONE: **0399** **4**

Increase for fewer hyphen help stops, decrease for more stops.

AUTOBS: **0422-042C**

Up to 10 characters, typically accent marks, may be patched into this table. Whenever one of these characters is entered, *WordStar* will automatically enter a backspace (^H) print control after the character. The table is initially empty. 00 ends the table.

RVELIM: **03D8** **2C**

Comma delimits data values (used with *MailMerge* non-document files).

RVQUOT: **03D9** **22**

Quote encloses values containing commas, leading blanks, etc. Also used with *MailMerge*.

Q: I am a new user of the Osborne interested in the possibility of using my portable companion for stock market analysis. However, the dealer from which I bought my machine tells me that the Osborne will not print graphics, thus it is limited in its ability to analyze stock market data.

A: Not true!

The Osborne 1 has a 32 character graphic set, a special delete character, and dim video giving the computer 65 different combinations of graphics. Anything that is printed on the screen can be printed to a dot-addressable printer by writing your own program or by purchasing one of the numerous graphics packages designed especially for the Osborne 1.

Even then, there are several packages that do not need Osborne's limited graphic set. Daisy wheel printers use incremental vertical and horizontal motions along with reverse paper feed to create bar

graphs, pie charts, point plots, etc. Dot matrix printers, especially dot addressable models, can print elaborate graphs. The Strobe printer/plotter provides an impressive show of multi-colored charts.

Thumb through this magazine for an idea on what's available in graphic-generating hardware and software.

Q: I have a large problem with my Osborne in that it frequently prints a piece of *WordStar's* hyphen-help message in the middle of my documents. I originally thought it might be the result of neglecting the hyphen-help message, but I get the same thing when it's toggled off. At any rate, it doesn't appear on the screen and so cannot be erased. How do I get this junk off my pages?

A: (For our readers, every twelfth line from the top of the enclosed examples printed the same misplaced hyphen-help message and all else was clean. The pages came from different files.)

It would help us to know if you're using single or double density, the length of the files, what page number(s) the problem occurred on, and serial number of your *WordStar*. Some of this information may not be pertinent but it's helpful when developing a case history for strange problems.

There are several "knowns" at work here:

- 1) We know that *WordStar* becomes very annoyed when working with long files. Even MicroPro's documentation says to keep the files in small pieces, although "small" is not defined. My experience shows that 20 page files or longer are guaranteed trouble makers.
- 2) "Backwards" scans (like `^QR`) on moderately long files should never be used. Instead, use the `^KS` command to save the file and then move forward. (This is not an issue with your particular problem, but it is good to know.)
- 3) "Messy" files are equally disliked by *WordStar*. It is possible after several weeks of editing and working with multiple files on a single diskette that each one becomes disper-

ed over non-contiguous sectors and tracks; *WordStar* must work very hard to keep track of where all the pieces of the file are. To get around this, every so often PIP your files to a fresh diskette. PIP, unlike COPY, merges file pieces, eliminates blank areas and basically cleans house.

- 4) Lastly, your exact problem was duplicated by our Circulation Manager when using long files and "pause between pages" ON. When the command was OFF, the files printed perfectly.

Q: Using an Osborne 1 with double-density drives, I cannot save an *MBASIC* program to the A drive as described in the *User Guide*. My dealer here in Boise says that Osborne Computer Corporation tells him this is normal. Is that true? Why?

A: I'm sure your dealer's question to Osborne's support representative was misunderstood, or the answer erroneously interpreted by the dealer. The answer, of course, is "not true" unless one of the following user errors exists:

- 1) The disk write protect notch is covered.
- 2) The diskette is full.
- 3) The directory is full.
- 4) You changed diskettes without informing *MBASIC* with the RESET command.
- 5) You're using an illegal character in the file name.

The RESET command closes all open files and updates the directory information; issue RESET before removing a diskette.

Let your dealer know that they are misinformed and the *MBASIC* programs are easily saved to any drive.

Q: My printer is totally ignoring any overstrike command, i.e., double-strike, boldface, underline. Why?

*A: Your printer needs nulls to delay the carriage return. Using *WordStar's* INSTALL program, patch a `Ø6` in at location `Ø6A1`. This adds four nulls to the Printer String Carriage Return sequence giving you five in all.*

Continued on page 93

SET TYPE

On Your Osborne 1™

The type in this advertisement was set on our Osborne 1™ Computer. Yours can also be used as an input to our sophisticated laser typesetting system. Use the editing features of *WordStar*® together with our simple typesetting commands to set type for all kinds of publications such as

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Announcing a NEW Software Deal for the OSBORNE

NOW, Your OSBORNE™ can

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Your computer is fantastically fast...once it knows what to do. You probably realize that a computer is the combination of hardware and software, working together smoothly, to give you what you want. Either one alone is useless. Software is really the key...the "mind" of a computer system. Every project or task you want to do requires a new specific software application to make your computer behave exactly the way you desire.

Of course you may be able to "force fit" your application into some existing canned database you have, but to really get results, you need a separate application to run on your computer.

Until now, that meant you were forced to pay money for application software off the shelf, or if you could afford it, have it custom written for you, or, if you are qualified, do it yourself...spending endless hours figuring it out and writing it. Now, your computer can write individual application programs for you. These programs are each separate, unique software programs that run in the standard BASIC on your computer.

A Brand New Technology

A company named ICR FutureSoft has developed this exciting and long awaited remarkable working tool for you called QUIKPRO+. It actually writes separate BASIC Programs for you...to do exactly what you want to do. And it's simple and easy to use...you create a new program in minutes instead of hours.

You can quickly generate a new program when you want it. You can generate thousands of different unique programs, each

one standing alone as a complete program that runs in BASIC. Best of all, you do not have to be a programmer to use it. The QUIKPRO+ software becomes your personal programmer, waiting to do your work for you any time of day or night you choose to use it.

The custom programs you generate from this program will let you perform Personal Filing, Fast Data Retrieval, including Addition, Changes, Deletions and Searches and Reporting (if you have a printer). You can even include calculations in the programs that you create. QUIKPRO+ is ideal for creating Inventory Programs. In fact you can actually use QUIKPRO+ to create an easy to use Database Management program or a simple Spread Sheet or Calculation Sheet. You can do all this and more and have no BASIC Programming experience.

How Does It Work?

You do it simply by answering easy questions that appear on your screen. You won't have to learn any Computer commands or special Programming Languages. Instantly the QUIKPRO+ software instructs the computer to write efficient, error free, BASIC Programs and puts the Programs right onto your own disk, ready for you to use.

The resulting custom program is truly a separate BASIC program. You can list it. You can modify it. You can customize it to your own liking. You can actually see what makes it tick. If you want to, you can sell the programs you create, without having to pay royalties or fees.

Try It and See

QUIKPRO+ for the OSBORNE is available now and can be shipped immediately. This program has proven itself to thousands of CP/M, IBM, and TRS-80 users, and now it's available for the OSBORNE. As part of a special promotion to encourage you to try this next generation of computer software, you can order QUIKPRO+ for the Introductory Price of \$149 plus shipping and handling, and of course there's a guarantee.

You can order right now by phone or mail. If you have Visa/Mastercard, call Toll Free from:

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Executive. The name itself conjures up visions of competence, control, the ability to channel many energies through a single source.

It is one well suited to the newest OCC product.

"The Executive is really a BMW at Volkswagen cost as far as CP/M machines are concerned," said project manager

The Next Logical Step

George Siverts, who in April showed the impressive machine to Osborne dealers for the first time.

Vastly expanded communications capabilities, along with twice the memory and the best software bundle available make the Executive a compelling proposition at the cost of \$2495.

OCC introduces the "Executive"

Mark Compton



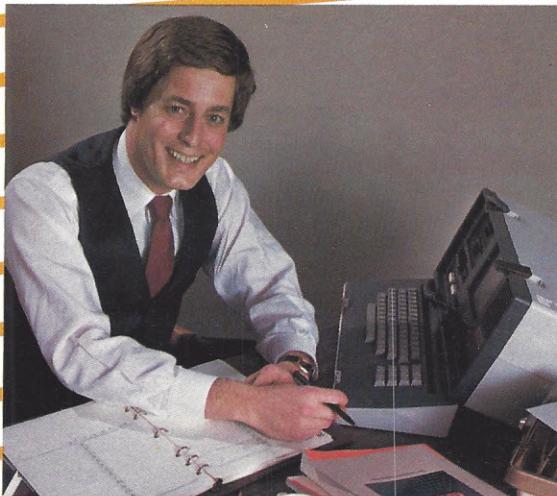
Its flexibility is impressive, starting with one of its star features: Universal Terminal Emulation.

"Universal Terminal Emulation essentially gives the Executive a dual function," said Siverts, by giving it the power to act like an IBM 3101, Televideo 950, Lear. Siegler, Adds Regent 25 or a number of other terminals.

Thus "one" machine acts like a terminal at work, capable of communicating with a company mainframe; the "other" is an independent, personal productivity machine that can be carried home.

"As far as I know, the Executive is the only portable on the market with Universal Terminal Emulation," said Siverts.

One port, like the one on the Osborne 1, is designed as an asynchronous printer channel. The other is wired to operate in synchronous mode as well, expanding the variety of computers and communication protocols the Executive can operate in conjunction with. Both are driven by a Zilog SIO (serial input/output) chip, allowing communication with any



George Siverts, Project Manager

serial unit, synchronous or asynchronous, at virtually any baud rate. None of the standard protocols—Bisynch, SDLC or HDLC—present a problem since this port likes them all.

"We decided on the SIO chip because we wanted to have a full implementation of the serial ports," explained Lee Felsenstein, chief architect of the Executive and original designer of the Osborne 1. "We also got the fanciest serial ports money can buy in order to run the full extent of the capabilities built into the SIO chip, which are considerable."

Adding communication hardware without sacrificing portability was a primary consideration while designing the new product.

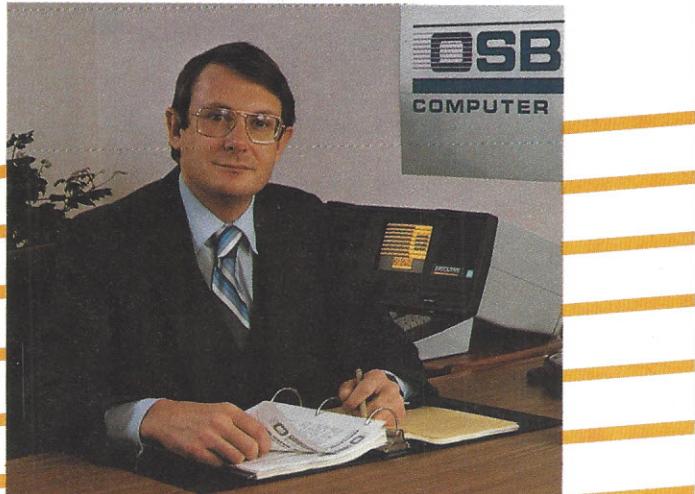
A major breakthrough occurred in early 1982 when it was learned that half-height "slimline" drives would soon become available. This allowed Osborne engineers to stack both drives on the left side. Thus they freed the right side of the unit for new hardware

(and the center for a larger screen)—allowing OCC to continue using the same portable package that made the Osborne 1 popular.

Felsenstein redesigned the machine's central processing unit (CPU) to accommodate the expanded I/O and memory structures and other changes in the machine's internal architecture. It reflects the same simplicity as the Osborne 1.

Augmenting its new capacity as well is the Executive's soft keyboard and "writeable" character font that allows creation of unique symbols and the definition of keys and characters in virtually any way, giving it the ability to match any mainframe or

Lee Felsenstein, Chief Designer



microcomputer it emulates. It also, therefore, can be user-designed to work in any language including French, German and Italian.

These enhanced communication abilities would have been for naught, however, had the Executive not also found a way to increase its memory from the Osborne 1's 64K to 128K and still remain a CP/M-based system.

The announcement by Digital Research of CP/M Plus last year solved the potential problem. Using a concept called "bank switching," CP/M Plus essentially takes the operating system out of user space and places it into a separate bank. This provides users with two advantages: first, 60K of RAM memory reserved for operator use and second, 64K of memory dedicated to the operating system. The bank switch handles the task of deciding which bank should be addressed.

The fact that the Executive loads its character fonts into RAM rather than ROM memory sets it apart from the rest of the microcomputer world. The advantage of its design is that a new font can be brought online by simply booting the system. Whatever font is on the boot diskette will be loaded automatically into RAM

memory—meaning a user can have as many fonts as diskettes. In most microcomputers, ROM memory has to be physically replaced to net the same effect.

The additional RAM reserved for software needed to be used to full advantage, meaning the implementation of an entirely new bundled software package. The package, included in the cost of the machine, includes WordStar, MailMerge, SuperCalc, CBASIC, MBASIC, CP/M Plus, the UCSD p-System (necessary to run UCSD Pascal), and Personal PEARL, a database program.

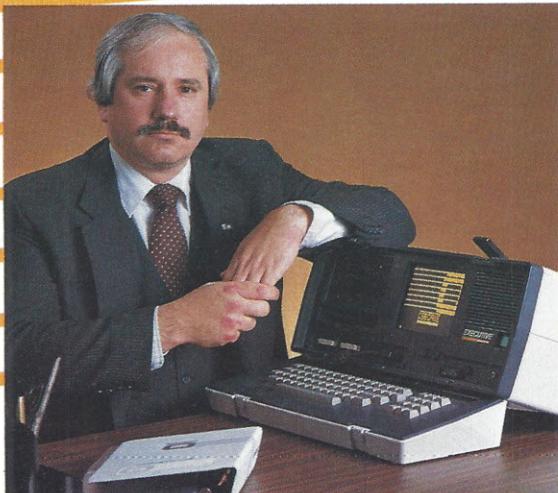
According to Roger Chapman, software project leader, a "much more friendly" user interface has been developed as well. Moreover, CP/M Plus itself enhances the Executive's software by, among other

double density, and all improvements are packed in the familiar gray and blue Osborne case.

Amazingly, the Executive has come from dream stage to dealer floor in less than a year.

"The development of the Osborne 1 was essentially a one-man operation, in the person of Lee Felsenstein, in the back of a warehouse doing whatever he had to do," said Tom Hayes, product marketing manager. "The situation is radically different now."

During the year the Executive was in development, OCC more than quadrupled its number of employees and increased its sales by a factor of 10, mandating various organizational changes.



Tom Hayes, Product Marketing Manager

things, providing significantly faster disk I/O.

Documentation to match such a massive software bundle was potentially intimidating, but the problem of a foot-thick user guide was circumvented by adopting a modular approach.

Six volumes rather than one accompany the Executive. One serves as a beginner's guide, while another contains reference aids. The remaining four are tutorials on the software.

"The idea is that once users have gone through the tutorials they can put them on a shelf and just carry the reference guide from then on," explained Mike Iannimico, documentation leader for the Executive.

The Executive's expanded capabilities answered some of the more technical concerns of Osborne devotees. Other improvements replied to more practical ones as well.

Incorporated into the new machine are such features as an 80-character, seven-inch screen lit with eye-soothing amber, and an on-off switch located in the front rather than the rear. All machines are



These changes, coupled with intense competition in the marketplace, squeezed the Executive's gestation period to its minimum.

"There were definitely some market considerations that made it necessary to move very fast," explained Hayes. "We saw a very real need in the business community and we wanted to be the first to fill it."

"It was our feeling that the Osborne 1 alone was not enough to span the whole portable market segment. But we felt we owned the portable market and that we just leased out space to other companies. To maintain that position, we needed to take the next logical step and produce a machine like the Executive. We also needed to be very quick about it."

Although high pressure of this variety generally spells trouble, Hayes believes OCC was able to skirt many potential pitfalls on strength of character alone.

"To develop a product like this from concept to finish in a year is outrageously fast," he said. "By and large, people were just crazy enough to make it happen—and I don't say that in a derogatory fashion. It takes a little bit of craziness to produce something this quickly. In a more established company, this sort of project would have taken from one and a half to two years."

We would like to thank Denise Caruso for her editorial assistance on this article.
(Specifications on the following page.)

Osborne Executive Specifications

Weight

28 lbs. (Shipping weight 40 lbs.)

Environmental

Maximum operating ambient air temperature 85 degrees F
Humidity - 95% relative, non-condensing
Minimum operating ambient air temperature 32 degrees F
Fan Cooled - 20 CF/M

Certifications

FCC, UL, VDE, IEC, CSA

Controls

69-key detachable keyboard, full-travel sloped keytops
12-key numeric keypad
Power on-off switch on front panel
Reset pushbutton on front panel
Video brightness and contrast controls on front panel

Main PC Board

Processor - Z80A, 4MHz CPU clock
Memory size
128K bytes dynamic RAM (Bank switched)
4K bytes video refresh RAM
8K bytes EPROM
4K bytes character font RAM
2K bytes scratch pad RAM
Z80A SIO serial communications controller
Bi-directional parallel port
Main memory is on piggyback PCB

Display System

4K byte memory-mapped display memory in alternate address space
12 bit wide display memory - 7 bit ASCII plus:
Reverse video
Blink
Dim
Underscore
Alternate character set
Amber on black or black on amber display software selectable
24 lines of 80 characters each
8 x 10 dot matrix for character cell
Writable character font
7 inch amber display
2 - 128 character sets

Operating Systems

CP/M Plus - Segmented version
UCSD p-System

Disks

Physical formats supported:
Osborne single density - 10 256 byte sectors, 40 tracks
Osborne double density - 5 1023 byte sectors, 40 tracks
IBM PC - 8 512 byte sectors, 40 tracks
DEC VT180 - 9 512 byte sectors, 40 tracks
Xerox 821 single density - 18 128 byte sectors, 40 tracks
Cromemco mini-disk - 18 128 byte sectors, 40 tracks
UCSD p-System Universal Format

Console Drivers

Entire keyboard is soft configurable
2-Key roll over
User programmable function keys

Boot Loaders

CP/M Plus on OCC double density format
UCSD p-System on OCC double density format

ROM Routines

Video primitives
Keyboard primitives
Disk primitives
Serial I/O drivers
Parallel I/O drivers
Power-on memory test
Power-on functional test of controllers

Utility Programs

Copysys-Copy the operating system from one diskette to another
Copy Format, copy and verify many soft-sectored diskettes
Format OCC double density blank diskettes
Chargen-Create or edit video character sets
Write character sets to diskette or font RAM
Setup Define function keys
Define arrow keys
Select normal or reverse video default
Select cursor definition
Select serial Baud rates for both channels
Select printer port
Select serial protocol
Select IEEE 488 device address
Define device initialization strings for all physical devices
Assign CP/M logical devices
Universal Terminal Emulation
Emulate a wide variety of standard terminal protocols
Provide port drivers for terminal emulation
Provide keyboard emulations
Provide OCC Com-Pac modem interface including:
Auto-dial
Auto-answer
File transfer protocols

The Next Step Forward

You have the finest portable computer on the market. And with it you are growing in knowledge and experience. And you are ready to move on. Now OSMOSIS gives you the growth path.

A path that leads you forward as your requirements become more sophisticated. Expanding the potential of your investment.

We have turned your Osborne™ into a completely professional business computer with total portability — at an unbeatable price.

OSMOS 1

Double Density. 184k per drive using existing drives. Fully compatible with all Osborne software. \$195. Install it yourself and save \$165 on Osborne's charge.

OSMOS 4

Disk Formatting & Conversion: Allowing your Osborne to read, write and format over 20 other manufacturers CP/M formats! \$225

OSMOS 5

80 column: Self-install internal board using plug-in connections. Software selectable between 52 and 80 columns. \$250

OSMOS 8

Analog Input: Monitoring light intensity, sound levels, temperature, humidity and moisture.
Analog Output: Driving panel meters and chart recorders. 8 or 12 bit.
Digital Input: Monitoring switch conditions. Provides interface for various instruments.
Digital Output: Transmission of control signals for light, heat, ventilation or valve control.

OSMOS 9

Microtelex. Turn your Osborne 1 into a complete, automated telex facility. Real-time clock and ability to send and receive in background mode. \$1195

OSMOS 1.5

Get Single-sided Double Density now on existing drives and upgrade to 370k per drive later with the addition of new drives. \$335

OSMOS 2

Double Sided Double Density. 370k per drive. Fully compatible with all Osborne software. \$895

OSMOS 3

Double Sided Double Density Double Tracking. 750k per drive. An incredible 1.5MB. of portability! \$1050

FREE OFFER!
with your purchase of any
Double Density upgrade — the amazing
OSMOS 4
DISK FORMATTING
& CONVERSION PROGRAM
Allowing you to read, write and format
over 20 other manufacturer's CP/M formats!!
SOFTWARE valued at \$225!!
(offer valid until end of July 1983)

OSMOS 6

Disk drive diagnostics. Available for all models of Osborne 1 (including Double Density). A detailed manual is included which shows the user how to make various adjustments. Technical support is available to every registered purchaser. \$29.95

OSMOS 7

Winchester disks. Expand your capacity to unprecedented levels! Available in 5 1/4, 10 1/2, 15 3/4 & 21 MByte units — a 42 Megabyte max capacity! \$2475 to \$3650

Pulse Counter: Production counting or measurement of angular velocity.
Watchdog Card: Detection of a system fault and activation of alarm or power switch.
Using a user-friendly interface of MBASIC, these powerful cards can be used for many applications from monitoring a burglar alarm to the guidance of an astronomical telescope.

All OSMOSIS upgrades are plug-in. There is no soldering or cutting. Our products are supplied as kits for existing units and require no modifications to the Osborne computer. An installation service is available at your Authorized Osborne Dealer. Dealer inquiries welcome.

OSMOS 10

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Self Publishing

compiling a book with your Osborne

William R. Evinger

Are you a writer or compiler of manuals, directories, guides or other documents that must be updated and re-issued on a timely basis? Consider using your Osborne computer as a vehicle for not only maintaining your data base, but also for self-publishing your documents.

You say you are a novice as far as computers are concerned and until recently you thought that a serial port referred to Battle Creek, Michigan. Then welcome to the club—because so was I. Having had NO previous experience with computers or programming, my purchase in December, 1981, of my Osborne 1, an Osborne monitor and a NEC Spinwriter 5510 was the beginning of a new adventure. These acquisitions outfitted my home-based computer services company, CompuRite, Ltd. in Arlington, Virginia.

I fully expected to spend the first year in business learning how to operate the Osborne and its software. However, after only a few

months of tinkering evenings and weekends, I was approached by author Richard J. D'Aleo. D'Aleo sought assistance in the preparation of a manuscript for a guide to publications and services by and about the Federal Government, entitled *FEDfind: Your Key to Finding Federal Government Information*. At first it was just a word processing project, with the intention of giving the 300 typewritten pages to a printer for typesetting. Richard, however, decided to publish the document himself; paying for the cost of printing it and taking charge of marketing and distributing his own product. With limited resources to finance this project, the cost of printing became an important factor in the decision to forego typesetting the material and instead use the copy from my NEC printer as camera-ready copy for the printer. As it turned out, this method was one-third as expensive as having the manuscript typeset and the pages made up by a commercial printer. Using either

method, the actual printing and binding of the document would be an additional expense.

According to D'Aleo, "the basic economic advantage of self-publishing is that the author/publisher keeps from 50-60 percent of the sale price of each book. This is assuming that the book is sold through a bookstore. The bookstore keeps the other 40-50 percent of the retail price. Generally, bookstores take only new titles on consignment. This means that money is paid to the publisher only after an agreed time—often 90 days—and then only for the number of books that have been sold during the period."

After this trial period, if the book is selling, the bookstore may decide to pay for the books before they are sold. "A fact of life in the publishing business that most authors are not aware of is that the publisher generally returns only about 10 percent to the author," D'Aleo explained. "They take all the risk and sometimes pay the author an

advance. This amount, however, is subtracted from the author's profits on the sales of the book. If one is able to take the financial risk and knows the market for the book, a substantial return on one's investment can be realized by self-publishing."

Making it Happen

The content of *FEDfind* was particularly conducive to handling on a computer using *WordStar*. As an information sourcebook, the updates have to be issued immediately upon completion of the manuscript. Otherwise, the pricing information for documents and services described would soon be outdated. By using the letter-quality copy from the NEC for printing, Richard was able to go to press as soon as the last correction was made. Printed and bound copies were available for sale in less than a month. Moreover, since the database for *FEDfind* is stored on diskettes, preparing a revised and expanded edition requires only updating and adding information."

For the convenience of entering and editing the text, a 52-character line was used to accommodate the size of the Osborne screen. After text entry was completed and all corrections made, the finished page size of the document was determined, so the number of characters to a line and the number of lines to a page could be set and the document reformatted accordingly. If an 8½ by 11 inch-sized document is desired, you can use a standard page format. In this particular case, the author wanted *FEDfind* to be a 6" x 9" paperback with a minimum of a ¾-inch margin all around. This meant that, prior to printing, the NEC hard copy would be reduced by the commercial printer to 77 percent of the original; such as can be done on most large photocopy machines. Instead of the usual 65-column pica type line, a 57-column line was necessary. Each page contained 58 lines, including the lines taken up by the

"Printed and bound copies were available for sale in less than a month. Moreover, since the database for *FEDfind* is stored on diskettes, preparing a revised and expanded edition requires only updating and adding information."

page number and running head. These line and page lengths provided the necessary top and bottom margins and sufficient side margins for binding a 6 x 9 inch page. In other words, on an 8½ by 11 inch page, the text covered a 5.7 by 9.66 inch area. It is helpful to note for reference on an index card the page format, as well as other specifications that are necessary for formatting the document consistently throughout. Figure 1 contains step-by-step instructions on how the page size was calculated for this particular document.

Once the pages are made up in final form, additions or corrections run the risk of changing not only the page where they appear, but also the successive pages in the chapter, and perhaps the numbering of the entire document. Careful editing of changes before the final

How to Calculate Typing Area

1

Decide on the dimensions of the publication and text area for the finished product, including page headers. For *FEDfind* it was 6 x 9 inches, standard trade paperback size, and 4½ x 7½ inches respectively (see diagram). The text area dimensions provided a ¾ inch margin on all sides.

2

Select the type style and size that will be used for the text of the document. Pica 10 was used for all but the "Title Index," where Elite 12 was used.

3

Decide on the percent reduction of the original size that can be used while maintaining readability of the reduced image. This can be done by typing a sample page on 8½ x 11 inch paper and reducing it to the various levels available on any of the commonly available reduction photocopy machines. For *FEDfind* a 77 percent reduction was chosen because it was available on the Xerox and Kodak

copiers and maximized the amount of text that could be typed on a page, before reduction, while still being easily read.

4

Determine the dimensions (line length and number of lines per page) of the original document text area, which when reduced will provide the final, camera-ready, text area. This is done by dividing the final text area dimensions by the percent reduction. In the case of *FEDfind*, 4.5 x 7.5 inches divided by 77 percent equalled 5.7 x 9.66 inches. (A "proportional scale," sold at most art supply stores, can be helpful when performing this step.)

5

Convert the "size of the original" dimensions into number of columns per line and number of lines per page (using 6 lines per vertical inch). The 5.7 x 9.66 inches for *FEDfind*'s text area dimensions resulted in a 57-column line, with a maximum of 58 lines per page.

Figure 1

formatting can avoid such problems. Consequently, it is essential to make up the numbered pages with headers on the computer *after* all of the text entry and major revisions and edits have been completed.

It is best if the page numbering is postponed until the final document is run. Also, final page make-up is the best time to enter hyphenations. This would apply whether the right margin is justified or not. The author decided against right justification since he preferred not to have the additional spacing that is sometimes necessary to achieve justification.

Tricks of the Trade

For ease of editing a 300-page document, each chapter was entered on a separate diskette and in a few cases when the chapter ran over 15 pages two diskettes were used. This allowed space for the creation of backup copies during editing, without running the risk of overloading the diskettes. Even short chapters were put on separate diskettes to avoid any problems. As the document neared completion, duplicate copies of each diskette were made before doing a chapter edit, just as a precaution. The final editing was done on the copy to make sure that the corrections were properly made and the "original" was kept as the backup until a new backup was needed, and then the process was reversed. Altogether 20 diskettes were needed for this project.

To save time and money (paper and ribbons), only the corrected pages were printed out as drafts. A cloth ribbon (only one for over 700 pages of printing) was used for the draft copies, but multi-strike film ribbons (about 6) were used for the final copy of the manuscript.

In addition to the page format, a consistent style and format for the entire manuscript had to be developed. This included consideration of what headings would be all capitalized and which would be up-

per and lower case (initial caps). Also, the use of centered and side headings, as well as the underlining of headings, needed to be decided. *FEDfind* used a combination of center and side headings (flush with left margin) as well as bold and double strike to make the headings more distinct. Pica 10 was chosen for the document text and Elite 12 was used for the index. Other print thimbles are available for the NEC and could be used for headings and text as desired, but the proper command (\wedge PC) has to be inserted in the document to stop the printer and change the thimble each time. An alternate method of handling headings is to have them typeset and stripped in the final copy of the manuscript, at an additional cost.

As part of the overall style, the pagination appeared in the upper left and upper right corners of the page. Each section, chapter and appendix started on a new, right-hand (odd-numbered) page. As necessary, blank pages were used in cases where a section of the book ended on an odd-numbered page. Running headings were used: on all left-hand pages "*FEDfind*" is used and on the right-hand pages the chapter/section title or a shortened version of it appeared. The dot commands for even-numbered pages were:

.PN # (to set the page number for the chapter, substitute the first page number of the chapter for #)

.HE \wedge PB# *FEDfind* \wedge PB (to bold-face the title. The # sign will automatically become the subsequent page number)

.OP (to turn off the default pagination command. Otherwise the page number will also appear centered at the bottom of the page)

For the odd-numbered pages:

.HE \wedge PB Chapter Title
\wedge PB (the first letter of the chapter title)

was located on the column that forced the # symbol over to the right margin)
.OP (to turn off the default pagination command)

Since *WordStar* cannot alternate different headings, I used the "find and replace" function (\wedge QA) to set the headings. The top of the even-numbered pages were marked with a symbol to be replaced, such as "@," and the odd-numbered pages with another unused symbol such as "!" This avoided having to type the same heading over and over again.

The Facelift

Every document needs a cover. Even if you are self-publishing your work, you should not scrimp on the cover art. Many people still judge a book by its cover. I would recommend having the cover and title page professionally designed and camera-ready copy prepared for printing, as was done for *FEDfind*. While it is possible to prepare a cover on the Osborne, especially with a plotter printer, the additional expense for cover art pays off by making your product more attractive and appealing.

An extremely helpful aid in preparing this document was a software package that checks for spelling errors. The one I used on *FEDfind* is *WORD Plus* by OASIS, which proved very satisfactory and saved an immense amount of the time and expense required to proofread a 300-page document and several drafts. *WORD Plus* has a 40,000 word dictionary against which it compares your document for spelling errors. The document still needs to be read carefully however, because sometimes a typographical error can result in a correctly spelled word; for example, "form" can become "from." Also, the document still must be proofed for grammatical errors. Basically, after using *WORD Plus*, the document is spelling-error free. Any further

scanning of the document can focus on its substance. If your document has a specialized vocabulary, *WORD Plus* allows the creation of a special dictionary.

Altogether, this project took approximately eight weeks from the time the first draft was entered until the final copy came off the printer. This included several rounds of corrections and changes, as well as time for preparing and entering the page numbers in the index.

The Value of Marketing

As you near completion of your document and know the final number of pages, you will need to obtain estimates from commercial printers on the cost of printing and binding the desired number of

copies. Self-publishing also requires that you consider marketing strategies for targeting the audience that would have an interest in your product. Use your Osborne for developing promotional material, e.g., a brochure, news release and transmittal letters for review copies. *MailMerge* is useful for developing mailing lists and sending personalized or general form letters. You may also want to use the Osborne for keeping information on your inventory and sales, handling your billings, and performing marketing analyses. The reward for handling your own distribution is that you keep more of the profit, but you should be prepared to undertake the marketing and mailing necessary to make the public aware of your product.

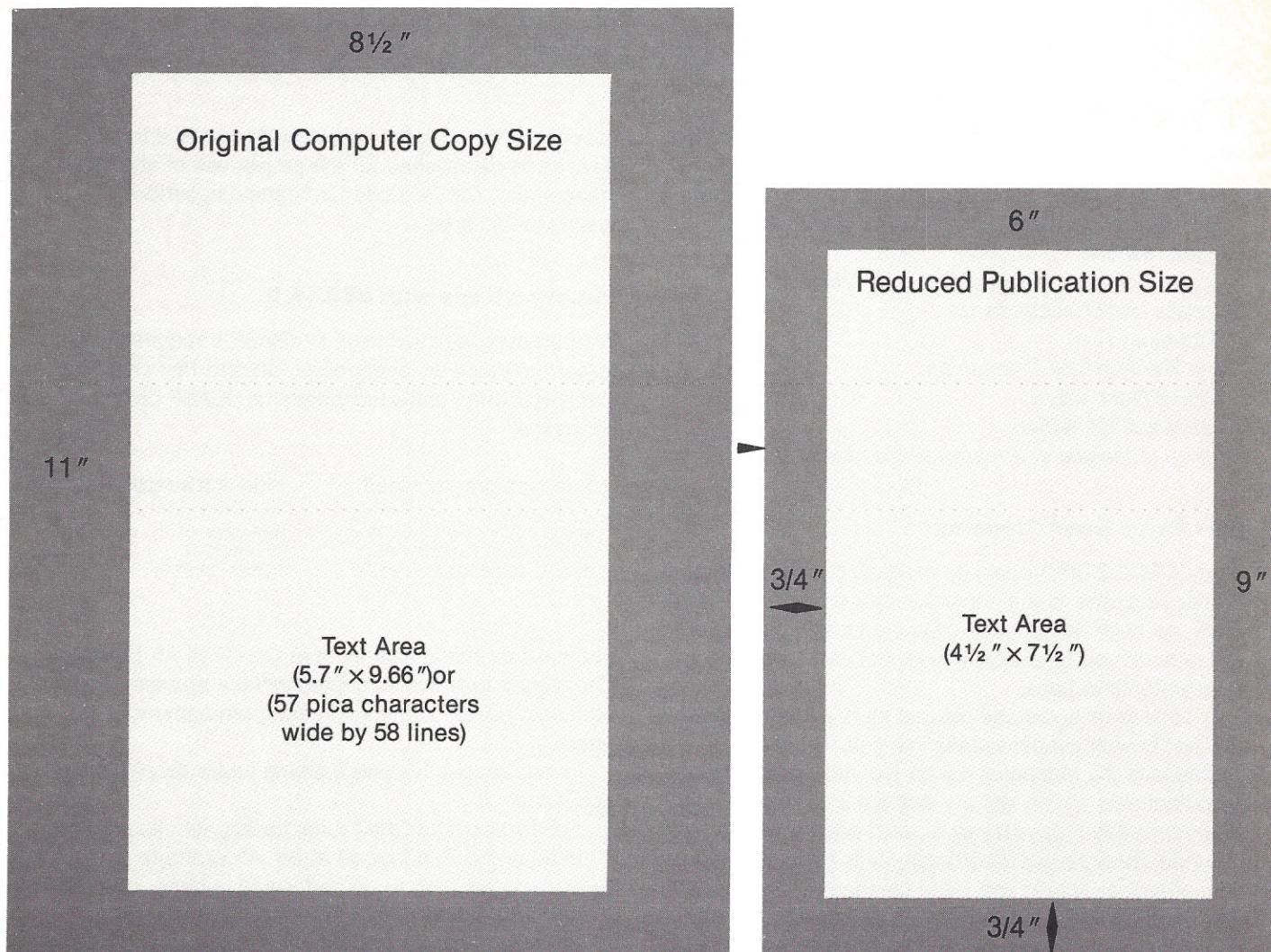
You don't have to be a computer expert to produce a professional-quality publication from your Osborne. If you prepare guides, directories, newsletters, pamphlets or brochures, your Osborne can be an aid in self-publishing these documents without typesetting costs.

For more information about the book *FEDfind: Your Key to Finding Federal Government Information* contact ICUC Press, P.O. Box 1447, Springfield, Virginia 22151.

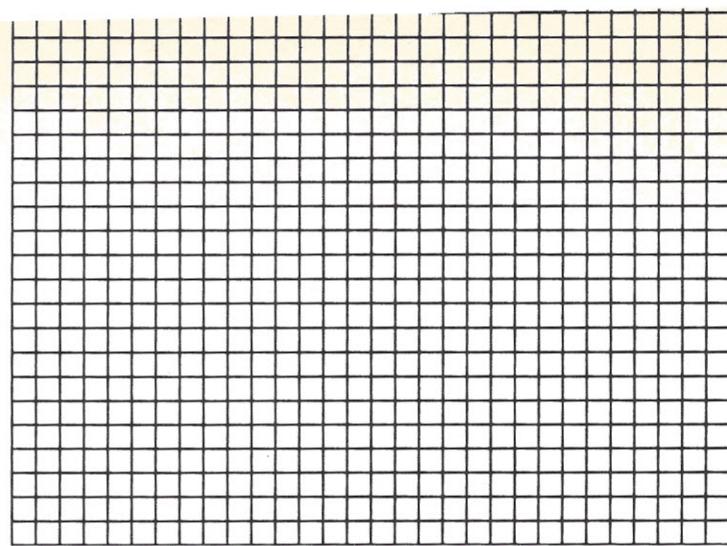
William R. Evinger is currently the Social Studies Department Chairman at Wakefield High School in Arlington, Virginia and president of CompuRite, Ltd.

FEDfind is a trademark of the Information Communications Users Company, Annandale, Virginia.

Diagram of Page Size Dimensions

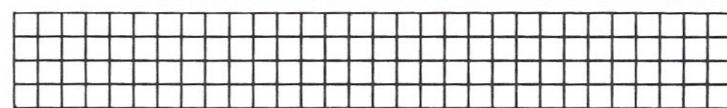


Note: This is at ½ scale.



TECHNICAL TIPS

more pearls of wisdom



Technical Tips are concise pearls of wisdom cast before our readers to provide clarity and insight into any number of subjects and situations concerning Osbornes.

We need support, via your input, to continue this periodic feature.

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Be sure to include your name and address.

Disk Drive Head Cleaning

Many a BDOS error could be prevented with a little attention and care to the important disk drive head. Eventually, all drive heads need cleaning as the build-up of grime on the surface simply does not allow proper read/write operations.

A popular do-it-yourself cleaner kit is a special disk and bottle of isopropyl alcohol solution. The disk is wetted with the alcohol and inserted into the disk drive. Manufacturers say to run the disk for 30 seconds, and to perform this ritual daily or at least once a week.

In the absence of proper testing it is difficult to judge how often one should use head cleaners, but we feel that much use of an abrasive disk is unnecessary and could wear down the head. To be on the safe side, 15

seconds once a month should suffice until standards have been established for the proper use of abrasive cleaner kits. *The Portable Companion* is performing testing in this area.

Function Keys with dBASE II

Programming function keys in dBASE II requires a different technique as every other function key character is deleted when activated within the dBASE program. Examples:

Function programmed

```
MODIFY COMMAND B:<CR>
SET DEFAULT TO B:<CR>
DBASE B:PROGRAM<CR>
```

How it's interpreted

```
MDF OMN :
STDFUTT :
DBASE BPORM
```

The last command was input at the CP/M A> prompt. The dBASE part was accepted without problem, but once into dBASE system, the program name was torn apart.

To circumvent this shortcoming follow these simple guidelines:

1. Follow standard CP/M rules for any function to be used under CP/M (while at the A> prompt).
2. For any function to be performed under control of dBASE II, follow each character of the function definition (including <CR>) with a space and insert

three spaces between full words. Each function should still be followed by **<ESC> <ESC>**.

3. For functions to be under mixed control of CP/M and dBASE II, simply mix rules 1 and 2.

Here are some examples of functions corresponding to the above numbers:

```

1. XDIR B: <CR><ESC><ESC>
2. M O D I F Y   C O M M A N D   B : <CR><ESC><ESC>
3. S E T   D E F A U L T   T O   B : <CR><ESC><ESC>
3. DBASE B : P R O G R A M <CR><ESC><ESC>

```

(The words were spelled in their entirety as an example only. Naturally, dBASE accepts shorter spellings; i.e., MODI for modify, COMM for command, etc.)

Out-of-Sync Columns in WordStar

Here's a shorty tip for beginners laying out columns in WordStar. When using print control characters on the titles of the columns (we'll use **^PS** as the example), the **^PS** moves the line of type over on the screen, but not on the printer. Subsequently, when lining up columns, what you see is not what you get.

After setting the heads or titles, use the **^OD** command to *turn off* the print control character display. Now, the actual alignment of the titles will be visible.

IEEE Device Address

Communicating with printers that use device addresses follows the same principle as dialing a phone: you need to use the correct number.

Double-density Osbornes (REV 1.4) have menu-driven device address patchers (use **SETUP**); however, single-density (REV 1.3) computers do not.

If the printer has a device address DIP switch, simply set it to match the Osborne 1's IEEE address (set to 0). If not, use the following fix. (Underlined commands are user inputs.)

```

A>MOVCPM 60 *
CONSTRUCTING 60K CP/M vers 2.2
READY FOR "SYSGEN" OR
"SAVE 39 CPM60.COM"
A>SAVE 39 CPM60.COM
A>DDT CPM60.COM
DDT VERS 2.2
NEXT PC
2800 0100
-S2576
2576 00 X  X = device address
2577 00 -
-^C
A>SYSGEN

SOURCE Drive (A or B)  <cr>  (loads from memory
                           instead of A or B)

DESTINATION (A,B or RETURN to exit) A
Put DESTINATION diskette in A, the press RETURN <cr>
system copied successfully

DESTINATION (A,B or RETURN to exit) <cr>

```

At this point, perform a cold boot (RESET the computer). Load DDT and look at location EAF6 to verify your modification.—Peter Brown

MBASIC Mathematical Conversions

Certain functions that are not provided by MBASIC may be calculated as follows:

Function	MBASIC Equivalent
SECANT	SEC(X)=1/COS(X)
COSECANT	CSC(X)=1/SIN(X)
COTANGENT	COT(X)=1/TAN(X)
INVERSE SINE	ARCSIN(X)=ATN(X/SQR(X*X+1))
INVERSE COSINE	ARCCOS(X)=-ATN(X/SQR(X*X+1))+1.5708
INVERSE SECANT	ARCSEC(X)=ATN(X/SQR(X*X-1)) +SGN((X-1)*1.5708)
INVERSE COSECANT	ARCCSC(X)=ATN(X/SQR(X*X-1)) +(SGN(X-1)*1.5708)
INVERSE COTANGENT	ARCCOT(X)=ATN(X)+1.5708
HYPERBOLIC SINE	SINH(X)=(EXP(X)-EXP(-X))/2
HYPERBOLIC COSINE	COSH(X)=(EXP(X)+EXP(-X))/2
HYPERBOLIC TANGENT	TANH(X)=EXP(-X)/(EXP(X)+EXP(-X))*2+1
HYPERBOLIC SECANT	SECH(X)=2/(EXP(X)+EXP(-X))
HYPERBOLIC COSECANT	CSECH(X)=2/(EXP(X)-EXP(-X))
HYPERBOLIC COTANGENT	COTH(X)=EXP(-X)/(EXP(X)-EXP(-X))*2+1 ^ARCSINH(X)=LOG(X+SQR(X*X+1))
INVERSE HYPERBOLIC SINE	ARCCOSH(X)=LOG(X+SQR(X*X-1))
INVERSE HYPERBOLIC COSINE	ARCTANH(X)=LOG((1+X)/(1-X))/2
INVERSE HYPERBOLIC TANGENT	ARCSECH(X)=LOG((SQR(-X*X+1)+1)/X)
SECANT	ARCCSCH(X)=LOG((SGN(X)*SQR(X*X+1)+1)/X)
COSECANT	ARCCOTH(X)=LOG((X+1)/(X-1))/2
INVERSE HYPERBOLIC COTANGENT	

Reprinted from the Microsoft BASIC-80 manual, copyright 1979.

Z80 Programming

The Osborne 1 fully supports the CP/M operating system. This means that all programs written in 8080 code properly using system calls will function correctly.

However, problems may arise when programs are written in Z80 code on Osbornes with revisions 1.2 and 1.3. The reason: BIOS in these revisions are written in Z80 code. So, when programming in Z80 code, all registers including the IX and IY must be saved before using system calls, otherwise these registers will get clobbered.

The prime registers should be used only with interrupts disabled and must be saved before using a system call. With revision 1.4 and up, the IX and IY registers are saved by the operating system, so only the 8080 registers and the prime registers must be saved before a system call. (To determine your BIOS revision number, press the RESET button and read the sign-on message.)

This Z80 problem may show up using programs or compilers which are not Osborne-approved. All programs which are to be compiled should use 8080 or Osborne-approved compilers. All Z80 packaged programs must be Osborne-approved, and all Z80 programs written on the Osborne 1 must take Z80 register saving into account.—Peter Brown.

Peter Brown is the Technical Support Supervisor at OCC.

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- MD-10 or larger systems will interface with any Z-80 computer (CCS, APPLE (CP/M), ZENITH/HEALTH, NORTHSTAR, GODBOUT, XEROX 820, Z-80/S100, ALSPA, or TRS-80 MOD II) using CP/M, OASIS or other system.

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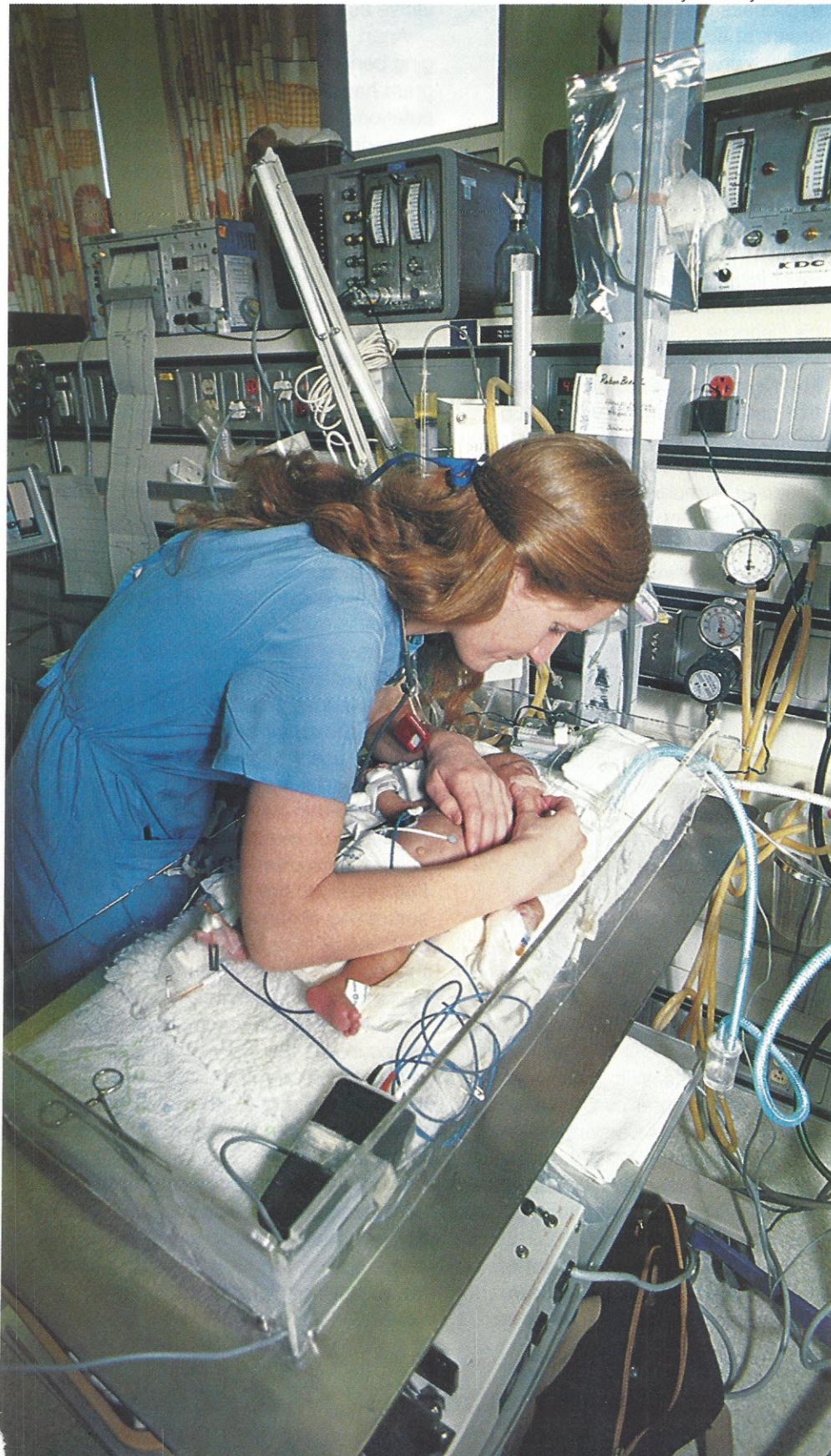
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Photos by: Randy Becker



Rx: Osborne 1

*Stanford
Medical Center*

Mark Compton

Six months ago, the Osborne 1 joined the staff of Stanford's Medical Center. Those who have come to know it since feel there's no looking back.

Computerization itself is hardly new to hospital care but readily accessible, inexpensive processing power is.

The need for cost containment has long weighed heavily on hospital administrators, many of whom have been known to blanch at the mention of mainframe costs. So it is that many functions that might have long ago been computerized continue to be done by hand today.

Nowhere are such functions more apparent than in the pharmacy. Countless computations fall to pharmacists daily in the form of equations needed to determine drug dosages, intravenous solution concentrations and serum concentrations. Add to this the repetitive tasks of typing labels, decoding cryptic orders and checking sometimes curious physician arithmetic and you've got a

"A third Osborne is hard at work in Stanford operating rooms helping collect real-time blood pressure data."

prescription for battling insomnia.

The first step toward relieving pharmacy drudgery at Stanford was taken nearly two years ago when Wendy Farquhar, a pediatric resident, complained to her husband Nick MacKenzie about the unnecessary time and effort it took to process intravenous solution orders at the hospital's pediatric satellite pharmacy. (See adjoining story.)

Nick, an anesthesiology resident with an extensive background in computer programming, was the right person to complain to. Using what free hours he could find, he set about concocting some *BASIC* relief for the physicians and pharmacists in the pediatrics ward on his Osborne.

Within a matter of months, MacKenzie had a program in hand that could take simple values submitted by a physician and do all the computations necessary to generate formulas for intravenous feeding solutions, labels for solution bottles and summary sheets for

recently conducted indicates that \$11,700 will be saved this year in physician and pharmacy time alone. Another simple program written by MacKenzie to generate multiple labels for batch solutions is expected to save another \$4,500.

"And those are very conservative estimates," Poole notes.

Apart from a four-week debugging period at the outset, the program has gone swimmingly. Computational errors have now become memories, overall effort has been reduced and hardware problems have yet to surface.

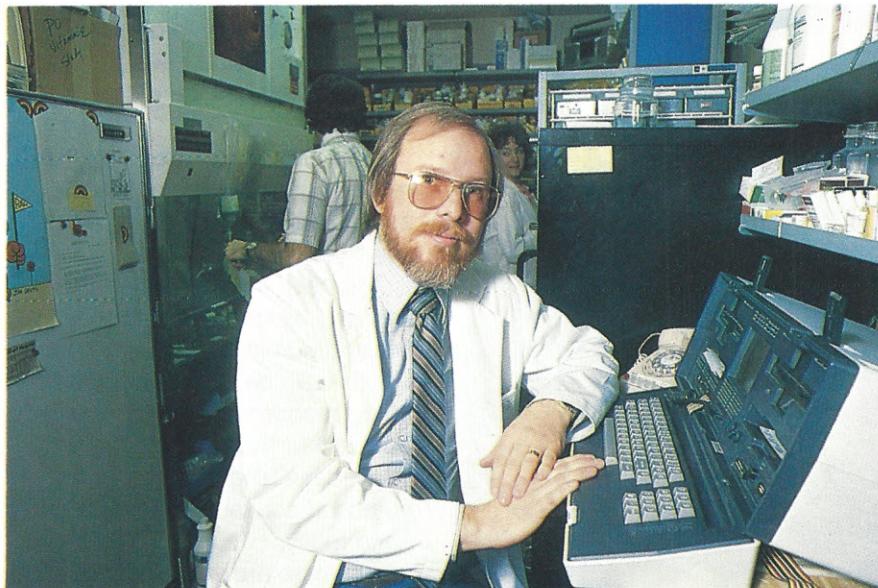
Several pharmacists from other areas of the hospital, noting such success, have looked enviously upon the pediatric pharmacy's bounty.

Efforts to automate, though, have not always been so well received at Stanford. A good deal of screaming and kicking has attended efforts to implement a computer system from National Data Corporation in the hospital's main pharmacy. The system ties in Stanford with pharmacies around the nation on a timesharing mainframe situated in Atlanta.

"There's been a lot of resistance to the system," Poole acknowledges, "and it's not because jobs are being threatened but because now that we've got this computer system, all these things need to be input and it's taking us more time than it did under our old manual system. Now, that means to me there's something wrong with the system."

"(One of the chief problems) is that we're trying to implement a system here in response to this institution's needs but the system's based in Atlanta. We've got to get on the phone and if there's a big storm or the phone lines are down, we're dead. The down time is incredible."

"We've had lots of people who are helping to implement this system down in the main pharmacy come up here and say, 'Why can't we have little microcomputers like you?'"



Robert L. Poole, supervisor of the Pediatrics/Nursery Satellite Pharmacy with his Osborne at his side.

physician charts. With the donations of a computer by OCC and a printer by Okidata Corporation last September, the program went online and a 30-minute procedure was immediately cut by more than 80 percent.

Dr. Robert Poole, supervisor of the satellite pharmacy, has been applauding ever since. A study he

The pharmacy's Osborne has been such a hit that a wide variety of new potential applications have been mapped out for other Osborne machines. Already, Mackenzie has been set to the task of modifying his pediatric feeding program for use in the adult intensive care unit. (OCC has promised to donate a second machine to run the program on.) Other work is also underway to create a program capable of handling the calculations used in shaping antibiotic dosing regimens.

A third Osborne is hard at work in Stanford operating rooms helping collect real-time blood pressure data (that is, blood pressure values plotted against time). Mackenzie sees a day when all the physiologic events that occur during the course of an operation will be recorded by microcomputer. Presently, that's a tedious task that falls to the anesthesiologist.

"Medicine is just filled with little projects like the pediatric feeding program that are going to be done on small computers someday," Mackenzie observes. "It was only with the advent of these inexpensive computers that a lot of applications could be approached with computer solutions."

Not everybody, though, has been quite so enthusiastic about the advent of microcomputing.

"I'll always remember when I was an intern at Valley (Medical Center in Santa Clara)," says Mackenzie. "I actually brought my Osborne in and set it down on a desk in the middle of the work area. At first the nurses were very afraid because they thought—like secretaries when word processors were introduced—that somehow this machine was going to take over some of their functions. The reality is that all it has done is simply improve the quality of care."

Nurses' fears about job security are not entirely unfounded, however, Mackenzie concedes.

"The reality is that a lot of nursing functions could be automated," he said. "There are some that can't and those are the ones I would

consider to be the most important. In fact, the things that nurses do worst are probably the things that would be best to computerize.

"The biggest impact I think computers will have in medicine is in the area of jobs that aren't fun to do—the ones that are boring, tedious and redundant and not done particularly well by people."

Automation in the pharmacy almost surely spells cutbacks as well, but spirits remain high, said Poole. For the time being, the new pediatric feeding program will result in no lost jobs, he insists, but it will provide "some breathing time."

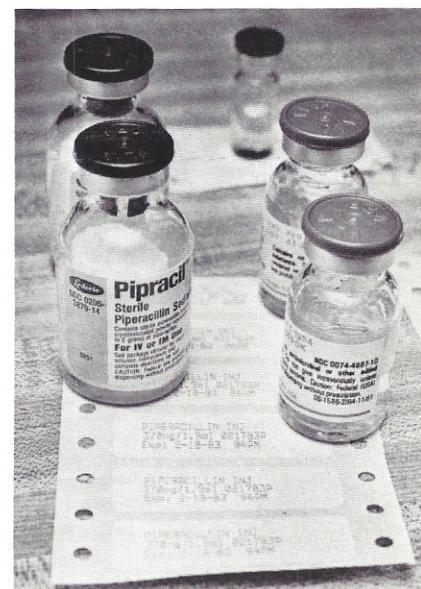
Not too far in the future, though, lie further developments that will almost certainly bring personnel cuts. A machine developed by American McGraw already has the ability to mix specified measures of dextrose, amino acids and water—the three main constituents of any intravenous feeding solution. Presently, technicians input the appropriate values, but work is already underway to develop an interface board that will allow the machine to talk directly to computers. Abbott Laboratories and Travenol, two other leading feeding solution producers, are also developing similar products.

"I see a lot of the functions currently being done by pharmacists as certainly being capable of being automated," Poole notes. "A lot of manual tasks certainly—the typing out of labels, the counting of tablets—are things that can be automated. It's going to be a function of drug knowledge and your ability to apply that to patient care situations that's going to make you a valuable tool. I think the profession's going to change greatly as a result of computers and I think it's going to be a big challenge to keep the profession alive."

"My philosophy is that you must become the most valuable commodity you can so that you don't become one of the unemployed. You either master it or become a slave to it."

"People who are resisting having

"In fact, the things that nurses do worst are probably the things that would be best to computerize."



"Mackenzie sees a day when all the physiologic events... will be recorded by microcomputer."

computers around are getting themselves farther behind the eight-ball because there's no way to get around automation. That's just the way things are going. I think it's the way things should go—especially with the health care industry under fire from the government and everyplace else to decrease the cost of health care. We've got to become more efficient.

"I think when you're talking about using computers within a hospital environment and can demonstrate that they benefit patient care, there's no way computerization can be denied. You can't compromise the care of a patient when you can demonstrate that computerization will help that patient get well faster and get him out of the hospital sooner."

The automation move ultimately may alter even the role of the physician. Programs already exist that can aid in patient diagnosis. Mackenzie believes that programs such as this, though, had best tread lightly.

"In fact, one of the philosophies I have used in writing programs for physicians is to make it clear the programs were merely tools," he explains. "That is, the programs should only help doctors get the job done, rather than do it for them. Any real thought process, any real decision making, must be left to the physician.

"Take the (pediatric feeding) program for example. I could have written a program where you just plugged in the child's morning blood values and it told you what the best (feeding) solution for that child would be. But it wouldn't be appropriate in a teaching institution because you're there to train physicians how to analyze problems. And they wouldn't use it anyway. I don't think they would trust it."

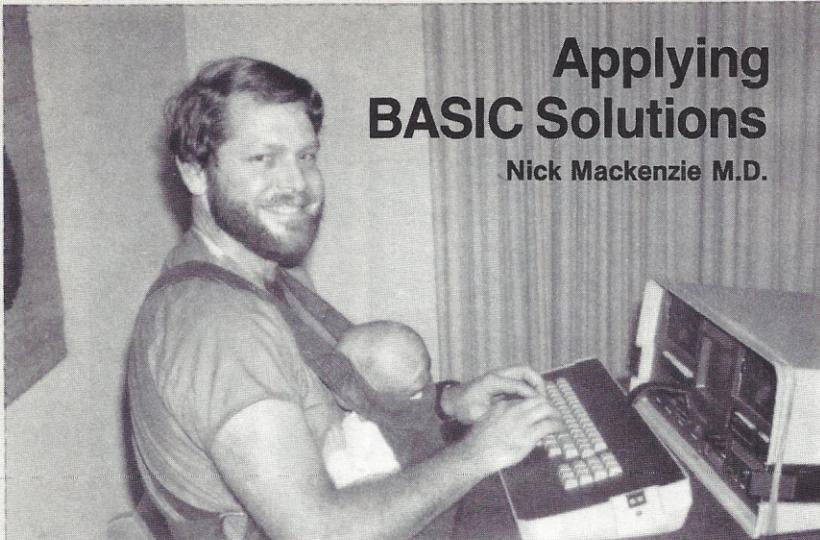
Ultimately, Mackenzie believes doctors will grow more comfortable with computer-aided diagnosis, "after all, there's more information than any human being can ever have a grasp on."



Doctors need not be threatened, though, Mackenzie argues. Computers will remain unable to move into a physician-like role until artificial intelligence takes several quantum leaps forward—a development considered unlikely in our lifetime.

"The brutal fact is that there hasn't been a lot of progress in artificial intelligence in the last several years—or if you want to be really pessimistic—the last 20 years," says Mackenzie. "I remember a professor of mine commenting on artificial intelligence and his joke was it was like standing on top of a tree and crowing about how much closer you are to the moon. The fact is we've progressed with artificial intelligence but we're an awful long ways from the point where computers will really be a threat to professional people."

"Take a look at the legal field, for example. LEXIS is a program that has had a tremendous impact in the field of law. It allows lawyers to research data quickly and yet I expect it's going to be a while before two computers argue it out in the Supreme Court."



Dr. Nick Mackenzie at home.

"Pediatrician STAT to the delivery room!"

With this call and an obstetrician's best efforts the battle begins to save the life of another premature infant.

As the first hours of life become days, nutrition emerges as one of the infant's greatest problems. Unable to take oral feedings because of a ventilator breathing tube and an immature gastrointestinal tract, the doctor must resort to intravenous feeding. This effort is particularly critical because, without sufficient nutrition, the infant will not be able to overcome problems posed by respiratory, cardiovascular and renal immaturity.

Pediatricians and pharmacists must tailor-make lifesustaining intravenous solutions to provide the carbohydrates, proteins, essential fats, minerals, trace elements and vitamins needed to meet metabolic requirements. Daily changes must be made in each constituent of the intravenous solution, referred to as Total Parenteral Nutrition (or TPN, to reflect the newborn's changing metabolism).

If blood laboratory results reveal that the baby's kidneys are excreting excess sodium or that its liver is having difficulty metabolizing fat, adjustments must be made in that day's TPN.

This changing diet is a very complex business with little room for error. Mistakes can often spell death.

The process of formulating solutions is time consuming. As daily laboratory values are examined, a physician must decide how much of each constituent to order. Determining each component requires several calculations and there are over a dozen components in a typical TPN assessment. Each TPN order takes a physician 15 to 20 minutes to write and a pharmacist nearly as much time to check and formulate.

After watching my wife, a pediatric resident, struggle through nearly a dozen of these orders on a Saturday morning when she was overseeing the care of almost 30 infants in the Neonatal Intensive Care Unit at Stanford University Medical Center, it was obvious that there had to be a better way. Enter the Osborne 1 and MBASIC.

The computerized solution to this time-consuming task consisted essentially of identifying the steps taken to compute the order and then combining them with the steps taken by the pharmacist to formulate the TPN mixing instructions and bottle labels. Once isolated, these steps were coded into MBASIC and the program

gradually took form.

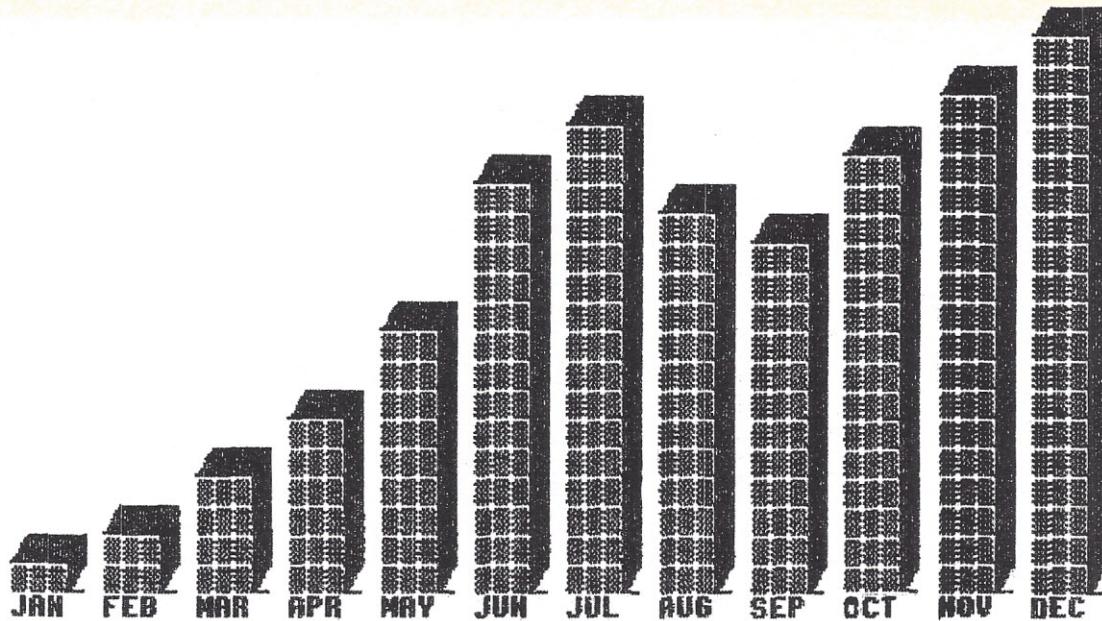
The program I ultimately developed opens by requesting the nutritional requirements of the infant. The Osborne then takes over, performing several computations and delivering the results.

A number of benefits have been derived from computerizing TPN ordering and formulation. First, the program has greatly decreased the potential for calculation and labeling errors. A great deal of time, moreover, has been saved—sparing patients needless costs and freeing doctors to tend to other matters. Where it previously took hours to write each day's TPN orders, it now takes minutes with the Osborne. Physicians, meanwhile, are better able to concentrate on the nutritional needs of their patients instead of tedious hand calculations. Pharmacists, on the other hand, have been saved the time it once took to compute mixing instructions and rework physicians' calculations—giving them time to consult on drug therapy questions more important to the well-being of the premature infant.

The computer program has been such a success at Stanford's pediatric ward that the program has been modified to meet the needs of the physicians and pharmacists who care for patients in the adult intensive care units as well.

The Osborne 1 was ideally suited to our needs in developing the TPN program because of its portability, use of MBASIC and support of both serial RS232 and Centronics interfaces.

While "on call" as an intern, I was able to prototype and test the program right in the intensive care nursery where colleagues and staff provided constructive criticism. I was then able to take my Osborne home to rework the program in a more contemplative environment.



GRAPHIC ILLUSTRATIONS

creating a 3-D bar graph

William Burkett

Editor's note: Mr. Burkett's 3-D bar graph was a subset of a much larger system. We made a few modifications to his program and added annotated text so beginning programmers could better understand the program design and commands. For advanced users, we challenge you to incorporate within this program a screen dump routine and a "write-to-disk" option that saves the program so it can be called up later. —bb

```

100  ' 3-D BAR GRAPH
110  ' BY BILL BURKETT
120  ' Houston, Texas
130
140  E$=CHR$(27):'ESCAPE
150  DC$=E$+"":'DIRECT CURSOR ADDRESSING
160  UY$=E$+"1":' START UNDERLINING ("1" is a letter)
170  UN$=E$+"m":' STOP UNDERLINING
180  DIM X$(20),I(20),U(20),N(20),T(20),AV(20)
190  F$=CHR$(150):G$=CHR$(127):E$=CHR$(153):B$=CHR$(128)

```

Burkett starts off by setting to string variables certain Osborne 1 terminal commands: escape, direct cursor addressing and underline codes. Array variables are dimensioned by statement 180.

Line 190 defines graphic characters using an offset of 127 decimal (e.g., 150-127 = 23; 153-127 = 26) in order to avoid going in and out of the graphics mode using CHR\$(27)"g" or "G". The offset does not apply to decimal numbers 127 and lower. The offset is not necessary, but it certainly makes for easier programming. The main drawback is that graphic characters are underlined—as you can see from the screen displays that accompany this article. Incidentally, CHR\$(127) is the delete character on the Osborne.

```

200  T=0 : A=0
210  PRINT CHR$(26):' CLEAR SCREEN
220  PRINT STRINGS(10,B$)+" VARIABLE BAR GRAPH "+_
  STRINGS(10,B$):PRINT:PRINT
230  PRINT"NUMBER OF OBSERVATIONS COVERED, (MAX=20)"
240  INPUT N
250  CS=STRING$(3,G$)
260  PRINT:PRINT"WHAT IS THE SCALE FACTOR,
  (i.e., 5, 10, 50, 100 etc.)"
270  INPUT S
280  PRINT:PRINT"ONE(1) LINE OF ";CS;" = ";S
290  FOR I=1 TO N
300  PRINT:PRINT"NAME OF OBSERVATION NO.";UY$,I;UN$
310  INPUT XS(I)
320  XS(I)=LEFT$(XS(I),3)
330  PRINT"NUMBER OF UNITS FOR ";UY$,XS(I);UN$;" = ";:
  INPUT U(I)
340  PRINT
350  T=T+U(I)
360  U(I)=U(I)/S
370  NEXT I:PRINT

```

This section provides for the variability of the bar graph program, such as numbers and names of observations and the scale factor. Array variables are set.

LEFT\$ lops off all but the left three characters in a string: JANUARY becomes JAN; MARCH becomes MAR.

STRING\$(3,G\$) repeats 3 times whatever the G\$ variable represents—in this case the delete character.

```

380  PRINT CHR$(26)
390  PRINT:PRINT"press any key to continue"
400  M=28
410  PRINT CHR$(26)
420  FOR I = 1 TO N
430  K=U(I)
440  P$=LEFT$(XS(I),3)+SPACE$(1)
450  IF K>20 THEN 460 ELSE 480
460  IF K<40 THEN K=K/2:GOTO 490
470  IF K>40 THEN K=K/4:GOTO 500

```

Line 400 initializes the "x" axis cursor position of the screen (horizontal axis). "K" is the height of one element of a bar graph; if it's too high, lines 450-470 set it into a smaller column.

```
480 P0$=STRING$(3,G$)+E$:GOTO 510
490 P0$=CHR$(110)+CHR$(47)+CHR$(50)+E$:GOTO 510
500 P0$=CHR$(110)+CHR$(47)+CHR$(52)+E$:GOTO 510
```

Can you figure this out? Hint—use an ASCII character code chart.

```
510 P1$=STRING$(3,G$)+F$
520 P2$=CHR$(138)+STRING$(3,F$)
```

P1\$ represents the middle line(s) and P2\$ is the top of an individual bar graph column. What character is represented by CHR\$(138)? Remember the offset for decimal values greater than 127.

```
530 L=54:M=M+5
540 J=1
550 PRINT DC$;CHR$(L);CHR$(M);P$
```

Positions the cursor and prints the name of the observation. "J" is a counter used in the next section.

```
560 L=L-1
570 PRINT DC$;CHR$(L);CHR$(M);P0$
580 GOTO 600
590 PRINT DC$;CHR$(L);CHR$(M);P1$:J=J+1
600 IF J<K THEN L=L-1:GOTO 590
610 IF J>=K THEN L=L-1:GOTO 620
620 PRINT DC$;CHR$(L);CHR$(M);P2$
630 NEXT I
```

The printing of the graphic characters begins. The "y" axis direct cursor addressing has one unit subtracted as long as J is less than K (the observation height). Statement 570 prints the bottom part of the column, 590 prints the middle portion and 620 adds the top. After it's finished printing the first observation, NEXT I loops back to statement 420. Line 540 prints the next column over five spaces by adding five to the "x" axis direct cursor addressing counter.

```
640 PRINT DC$;"7 ";"press any key to continue";
650 Q$=INKEY$:IF Q$="" THEN 660 ELSE 665
665 PRINT:PRINT
670 AV=T/N:PRINT"TOTAL OF UNITS FOR OVERALL PERIOD = ";
UY$;T;UNS
680 PRINT"AVG UNITS FOR ";UY$;AV;UNS;
" OBSERVATIONS = ";UY$;AV;UNS
690 PRINT:PRINT"press 'V' for another VARIABLE BAR GRAPH"
700 Q$=INKEY$:IF Q$="" THEN 700 ELSE 710
710 IF Q$="V" OR Q$="v" THEN 190
720 END
```

Finishes up the program. Lines 660 and 700 are examples of how to pause a program without disturbing the screen display.

We hope you have fun programming and ultimately modifying Mr. Burkett's program; the possibilities for variation are numerous. For example, you may add horizontal ruled lines, disk output options, plot overlays (compare last month's figures to this month's, for example), and most importantly, screen dumps to dot addressable graphics printers. Hmmm... I think I see an article brewing for a future issue. Any volunteers? ☺

Direct cursor commands

Hex sequences for direct cursor addressing are supplied in the revised Osborne Users Manual; however, the ASCII equivalent is easier to use in MBASIC programs.

Command	Action
PRINT CHR\$(7)	rings the bell
(8)	moves the cursor left one position without any erasure
(10)	moves the cursor down one line
(11)	moves the cursor up one line
(12)	moves the cursor right one position
(13)	performs a carriage return (no line feed)
(26)	clears the screen and homes the cursor
(27)	escape
(30)	homes the cursor
(27)“(“	begins half-intensity video display (dim)
(27)“)”	ends half-intensity video display (bright)
(27)“E”	inserts a line at cursor position
(27)“g”	starts graphic character interpretation
(27)“G”	ends graphic character interpretation
(27)“I”	starts underlining all characters
(27)“m”	ends underlining all characters
(27)“Q”	inserts a character at cursor position
(27)“R”	deletes a line at cursor position
(27)“T”	deletes from cursor to end of line
(27)“W”	deletes a character at current cursor position

The command formula to move the cursor to a particular area on the screen is:

```
PRINT CHR$(27)“ = ”CHR$(YPOS + 32)CHR$(XPOS + 32);
—bb
```

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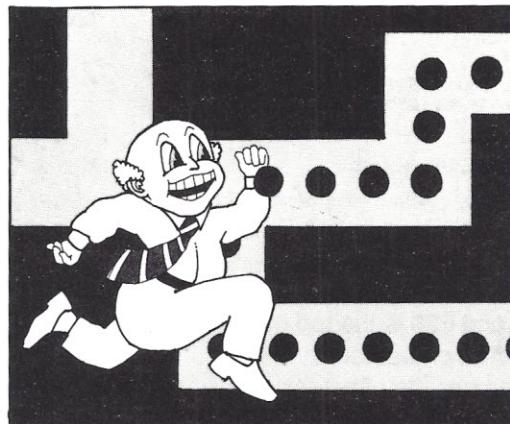
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OZZY MAN

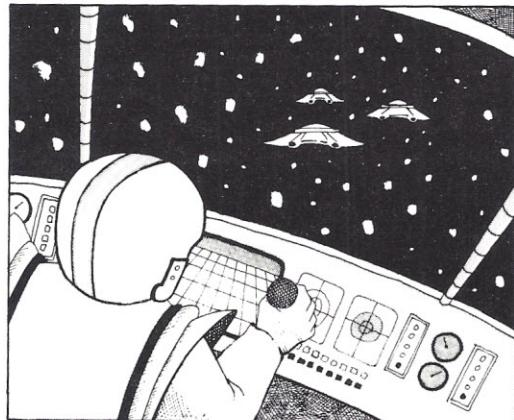
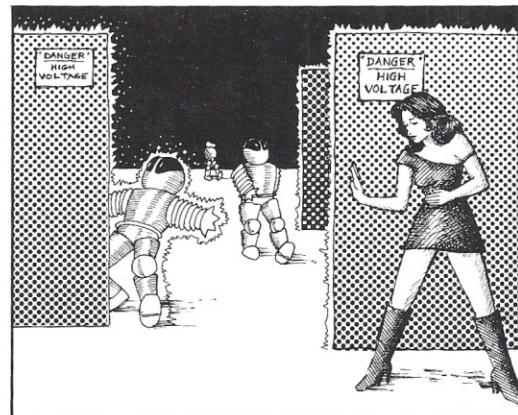
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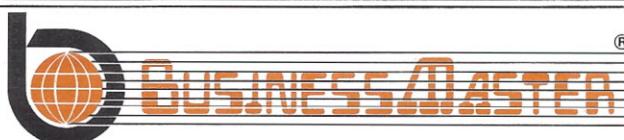
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DATING YOUR COMPUTER

a systems date facility

Walter B. Novinger

```
10 DATE PROGRAM
20 The date placed by this routine remains
30 intact after a warm start (RESET button)
40 as well as any diskette swaps (RESET state-
50 ment in MBASIC or ^C from CP/M).
60
70 The date is poked to locations 0050-005B
80
100 DATA "January ","February ","March ","April ","May ","June "
110 DATA "July ","August ","September ","October ","November "
120 DATA "December "
130 OPTION BASE 1:DIM M$(12):FOR I=1 TO 12:READ M$(I):NEXT
140 PRINT:INPUT "Enter today's date as MMDDYY":DT$=
150 M=VAL(LEFT$(DT$,2)):IF M<1 OR M>12 THEN 140
160 D=VAL(MID$(DT$,3,2)):IF D<1 OR D>31 THEN 140
170 Y=VAL(RIGHT$(DT$,2)):IF Y<82 OR Y>85 THEN 140
180 POKE 80,D:POKE 81,M
190 FOR I=1 TO 9:POKE 81+I,ASC(MID$(M$(M),I,1)):NEXT
200 POKE 91,Y
210 PRINT:PRINT "Page zero date buffer initialized. If you turn"
220 PRINT "the computer off, you must re-run DATE to"
230 PRINT "re-initialize the date."
240 PRINT:PRINT "DATE removed from memory -- BASIC is ready"
250 NEW 'Deletes program leaving BASIC ready for user's input
254
255 ' Warning -- Line #250 deletes the program.
256 ' Add in after the program is checked out
257 ' for keystroke errors, or first SAVE to disk.
```

Figure 1

While developing a business program for the Osborne 1, it became apparent that I would need a facility to store the current date in a place accessible to any program running under MBASIC. Ideally, such storage would be unmodified by CP/M, MBASIC or any user program. In addition, the means of accessing the date should require no machine language programming and CALLs or USRs from BASIC programs. My ultimate goal was to produce a program that would request the current date when MBASIC was booted, and a simple subroutine for accessing the date stored at boot time from within any BASIC module.

This article describes three elements of the Osborne date facility as I have implemented it: 1) The DATE program that requests and stores the date; 2) the GETDATE subroutine to access the date; and finally 3) AUTOST.COM modifications to make the date setting process "automatic" when MBASIC is booted.

DATE.BAS (Figure 1)

The first decision was to determine the location in which to store the date. After perusing the Osborne *User's Guide*, I stumbled upon a chart labeled "Memory Allocation" in the section covering assembly language (page R-243 in my manual). Here, in locations 0050H-005BH, I found what I was looking for—a block indicated as "not used." This 12-byte block was just what I needed to store dates in two formats.

After I found the buffer I needed, writing DATE was easy. I stored the date in both numeric and ASCII formats since the program that later fetches the date with GETDATE has its choice of formats without having to duplicate DATE's logic.

The code of DATE is straightforward and should cause Osborne users little difficulty. Note, however, that DATE deletes itself after storing the date. This facilitates the auto-loading feature by leaving MBASIC

in a pristine state; exactly where the user expects it to be, ready to accept program input.

GETDATE.BAS (Figure 2)

This subroutine is used within BASIC programs to access the date stored by DATE. Execution of a GOSUB 200 in a program results in four variables being initialized with the date information. DAY, MONTH and YEAR contain the respective date components in numeric format. These would be useful, for instance, in placing a date in a file record (using the LSET statement to create a two-byte file record field). The string DT\$ is set to the date in the form "12 May 1982"—useful for labeling listings and the like. Note that this string is returned with one leading space (like BASIC's STR\$ function) and no trailing space.

AUTOST.ASM (Figure 3)

Implementation of the set-date-at-boot facility required that the AUTOST.COM program resident on the MBASIC diskette be modified. Fortunately, the *User's Guide* provides instructions for doing exactly this (if you can follow the rather cryptic comments). In Chapter 8, "CP/M Revisited," there is a discussion of CP/M's ASM and LOAD programs; included with the discussion is a listing of the AUTOST.ASM source. The text which is stored beginning at label FILENAME is placed in the CP/M command buffer by the subroutine labeled AGAIN. When the PCHL instruction at address 0138H is executed, CP/M will use this text as a command to be executed. As you can see from the listing in Figure 3, this command will be MBASIC DATE. Note that this text must be followed by at least one zero-byte to terminate the command (see listing comments). MBASIC then loads and executes the file DATE.BAS, our DATE program. Obviously, DATE.BAS must be resident on the MBASIC booting diskette in Drive A.

The second major modification

```
1'      GETDATE Subroutine sample
2'      Date is stored in DT$
10 GOSUB 200
20 PRINT CHR$(26)
30 PRINT SPACES(15);DT$
40' Insert your program here.
50 PRINT:PRINT "This is a test.":PRINT
60 END
200 DAY=PEEK(80):DT$=STR$(DAY)+" ":"MONTH=PEEK(81):I=82
210 WHILE CS<>" " AND I<91:C$=CHR$(PEEK(I)):DT$=DT$+C$:I=I+1:WEND
220 YEAR=PEEK(91):DT$=DT$+"19"+RIGHT$(STR$(YEAR),2)
230 RETURN
```

Figure 2

AUTOST.ASM Modifications

Copy the AUTOST.ASM program (version 1) exactly as it appears in the Osborne User's Guide in Chapter 8 except for the following modifications.

Step 1

Change this line LXI B,10 ;set counter
to LXI B,13 ;set counter

This sets the character counter. The command string (MBASIC DATE) was longer than 8 characters so LXI B,length becomes LXI B,length+2.

Step 2

Change the command line to:

```
FILENAME: DB 11,'MBASIC DATE',0,0,0,0
length of      command
      command      string
```

Step 3

Finally, add a few message lines. There is room for maximum of 8 lines of code:

```
ENDMES: DB CR,LF,LF,LF,9,'Loading MBASIC to initialize date',CR,LF,LF
DB 9,'When requested, enter today',39,'s date',CR,LF
DB 9,'in the format shown in the prompt',CR,LF,'$'
```

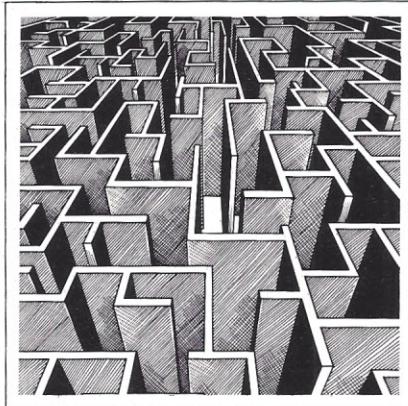
Figure 3

involves the message that AUTOST displays after printing the Osborne logo. This message is stored beginning at label ENDMES and is displayed (in subroutine PRINT) by a BDOS routine. This routine merrily prints characters until it encourages a \$; thus, the last character of the ENDMES message is the dollar sign.

When you have used WordStar (in non-document mode) to enter AUTOST.ASM and make the modifications described, assemble and load the resulting program. I

suggest that you do this on a scratch diskette (to avoid clobbering anything useful).

The inclusion of the system date facility has made business programming on the Osborne much more professional-looking as well as easier to write. The AUTOST facility provided with the Osborne is extremely handy; taken together with the documentation and the source code listing, the user has the beginnings of a powerful customization facility.



MBASIC brain twisters solved

the most frequently asked questions about MBASIC

Gary Cuevas

You are probably reading this article because you've run into that unsolvable bug that's rendering your *MBASIC* program useless. You may be reading this because you've bitten your nails to the quick and lost countless hours of sleep. Maybe you're reading this simply because you're curious. Whatever the reason, I hope this article will help you find the solution to a problem, or prevent you from running into a brick wall with your future *MBASIC* programs.

Randomize And Random Numbers

Have you ever noticed how the *MBASIC* random number generator always seems to yield the same set of random numbers? Have you ever noticed how, when using the RANDOMIZE statement, program execution is halted with the obtrusive prompt "Random Number Seed (-32768 to 32767)?" If an *MBASIC* game is written and the player enters the same random number seed every time, the outcome of the game becomes quite predictable. How can this be avoided?

Solution:

The answer is to use a simple routine such as this:

```
10 PRINT "READY TO PLAY?";
20 ANS$ = INKEY$
30 S = S + 1
40 IF S = 32767 THEN S = -32768
```

```
50 IF ANS$ = "Y" THEN GOTO 80
60 IF ANS$ = "N" THEN GOTO 999 'YYY is the
  program end
70 GOTO 20
80 RANDOMIZE S
90 etc. etc. etc.
```

When an argument is supplied to the RANDOMIZE statement, the annoying prompt is suppressed. The INKEY\$ loop at line 20 scans the keyboard at an extremely fast rate, adding 1 to the variable S each time the computer finds that a response has not been typed. A loop similar to this can be incorporated into a variety of locations throughout a given program, constantly adding to the value of S. S can then be used as a true random seed, as it is a totally timing-dependent value.

Direct Cursor Addressing

Can the Osborne 1 do direct cursor addressing? How? The formula for cursor addressing found in the *User Guide* looks cumbersome, and doesn't seem to work right.

Solution:

MBASIC does support direct cursor addressing on the Osborne 1. The formula found on page 272 of the *User Guide* (rev. 2/22/82) is somewhat cumbersome, but can

be dealt with quite easily if a function is defined to do so. The function should appear as follows:

```
10 DEF FNC$(X,Y)=CHR$(27)+" = "+CHR$  
(Y+32)+CHR$(X+32)
```

Now you can feed coordinates for X and Y to your program and print prompts or messages anywhere on the screen. Keep in mind that the computer starts counting with 0. So being, the upper left-hand corner of the display becomes 0,0 and the bottom right-hand corner of the display becomes 23,51. The cursor may now be addressed by using a program statement such as:

```
20 PRINT FNC$(10 15)  
or 20 PRINT FNC$(10 15) "Hello!"
```

One last note on cursor addressing—it will only work properly after the screen has been cleared (i.e. PRINT CHR\$(26);). After the screen scrolls up, the video RAM is offset and the cursor addressing routine will appear to work improperly.

Random Access Problems

The Osborne 1 *User Guide* says I can have up to 15 files open while using *MBASIC*. A BAD FILE NUMBER message appears after opening up the fourth file. An ILLEGAL FUNCTION CALL error occurs when using record sizes greater than 128. Can anything be done about this?

Solution:

Yes, these problems can be solved. Unfortunately, you won't find the answer in your *User Guide*—our writers forgot to include this vital information.

MBASIC must be initialized in order to work properly given the above conditions. *MBASIC* can be initialized at the CP/M level with the following commands:

```
A>MBASIC /F:7 or A MBASIC FILENAME/F:7
```

The /F: command as used above tells *MBASIC* that you will use up to seven files in your program. The default value is three. You may use up to 15.

In order to manipulate record sizes greater than 128 (which is the default maximum size), use the following command:

```
A>MBASIC /S:200  
or A>MBASIC FILENAME/S:200
```

In the above example, the maximum record size is set at 200. The reason there is a default of 128 for the record size and a default of three for the number of files

is that any increase to these parameters results in less transient program area.

MBASIC can be forced to load itself into a particular memory area by using the /M: command.

```
A>MBASIC /M:32768  
or A>MBASIC FILENAME/M:32768
```

The above example forces *MBASIC* to use only the first 32K region of memory space. The memory location following the /M: command may be expressed in hexidecimal by preceding the hex address with an "&H". The three commands described above may all be used at once, if necessary:

```
A>MBASIC FILENAME/F:5/S:165  
A>MBASIC /M:&H8000/S:20  
A>MBASIC FILENAME/F:1
```

These examples show how the "slash commands" may be used.

Misconceptions Regarding The Field Statement

The FIELD statement is used to allot buffer space for data that is to be written to or read from a data file. Variable names used in the FIELD statement should never be used for any other purpose in a program. A good way to keep track of your variables is to precede field variable names with "B" (for BUFFER). In order to GET variables from the field buffer, use a table in your program such as this:

```
100 CLIENT$=BCLIENT$  
110 ADDRESS$=BADDRESS$  
120 PHONE$=BPHONE$  
130 etc. etc. etc.
```

In order to put variables into the field buffer, it is necessary to use either the LSET or RSET commands, depending on whether you want the data to be left-justified or right-justified within the field buffer. Again, use a table such as the following:

```
200 LSET BCLIENT$=CLIENT$  
210 LSET BADDRESS$=ADDRESS$  
220 LSET BPHONE$=PHONE$  
230 etc. etc. etc.
```

A common misuse of the FIELD statement is illustrated below. A programmer might try to allow field buffer space for a large array. This method *will not work*:

```
500 FOR X=1 to 50  
510 FIELD#1, 10 AS NUM$(X)  
520 NEXT X
```

Each time a FIELD statement is executed, a kind of a mask is written over previous fielded buffer space. To understand this effect, consider the following example:

```
500 FIELD#1, 100 AS G$  
510 FIELD#1, 25 AS S$(1), 25 AS S$(2), 25 AS S$(3),  
    25 AS S$(4)
```

The net result of the above code is to first allot space for a 100 character string variable in the field buffer, then to make 25 character segments of the 100 character variable accessible by the names S\$(1), S\$(2), etc. It will not allot 200 bytes of buffer space for five variables, as one may expect.

The problem remains though, how to allow buffer space for a large array. As you know, the maximum length of a program line in *MBASIC* is 255 characters. You just plain run out of room if you try to field an array in the conventional manner:

```
500 FIELD#1, 10 AS NUM$(1), AS NUM1(2),  
    10 AS NUM$(3), etc.
```

One way around this (the only way I am aware of) is to use the FIELD statement to create one large variable buffer and a temporary buffer:

```
500 FIELD#1, 500 AS BNUM$  
510 FIELD#1, 10 AS TEMP$
```

Next, a subroutine will have to be written to take the values of NUM\$(1) thru NUM\$(50) and create a 500-byte-long string out of them (NUM\$). The subroutine will look something like this:

```
1000 FOR X = 1 TO 50  
1010 LSET TEMP$ = NUM$(X)  
1020 NUM$(X) = TEMP$  
1030 NUM$ = NUM$ + NUM$(X)  
1050 NEXT X  
1060 LSET BNUM$ = NUM$
```

The above routine works like this:

Line 500 creates a 500-byte buffer for BNUM\$. Line 510 creates a temporary buffer ten bytes long, which is written over a small portion of the larger buffer. The temporary buffer is used to convert the length of the strings we are dealing with (NUM\$(1) thru NUM\$(50)) to a constant, ten. This is accomplished by LSETting each variable, one at a time, into the buffer. The variable is then immediately removed from the buffer, complete with spaces appended, making the string length ten. The strings are then joined together, creating one long string consisting of 50 variables, all with the length of ten. It is not necessary to do this using a FOR NEXT loop, but if all of your variables are of the same length (as in this example) the job is greatly simplified. The LSET command in line 1060 above will overwrite anything that may be in the temporary buffer space, and the task is

completed...

Well, not quite completed. We managed to get all of that data into a file, now how do we get it out? After GETting the appropriate record, a routine similar to the following should be used, with the MID\$ function restoring the array:

```
2000 NUM$ = BNUM$  
2010 Y = 1  
2020 FOR X = 1 TO 50  
2030 NUM$(X) = MID$(NUM$, Y, 10)  
2040 Y = Y + 10  
2050 NEXT X
```

This routine will take the 500 character-long string (NUM\$) and convert it into 50 ten-character-long strings by using the MID\$ function in line 2030 above. Again, it is not necessary to perform this operation with a FOR NEXT loop, but it is preferable to do so if all of the string lengths (NUM\$(1) thru NUM\$(50)) are the same.

Mysterious Linefeeds Or Garbage Characters

Mysterious linefeeds will sometimes occur while using direct cursor addressing or underlining. Garbage characters will sometimes occur in graphics applications (a round character followed by a triangular character). What's happening?

Solution:

This problem usually comes up during repeated sequences of PRINT commands, as in a FOR NEXT loop or a repeated GOTO statement. In particular, the problem arises when these repeated PRINT statements are followed by semicolons. The following example demonstrates the problem:

```
10 DEF FNC$(X, Y) = CHR$(27) + "="  
    + CHR$(Y + 32) + CHR$(X + 32)  
20 'THE ABOVE LINE DEFINES A CURSOR  
    ADDRESSING FUNCTION  
30 FOR X = 1 TO 100  
40 PRINT FNC$(5, 0);  
50 PRINT "THIS IS A TEST";  
60 NEXT X
```

We would expect this program to position the cursor at the first column of the fifth line and print THIS IS A TEST. We would also expect the process to repeat itself 100 times, with the words THIS IS A TEST being overwritten each time.

What really happens, though, is that *MBASIC* keeps track of everything being printed. *MBASIC* has an internal counter that automatically issues a line feed and a carriage return upon reaching 80. Notice in lines 40 and 50 above, our printed strings are followed by semicolons. This is a perfectly legitimate thing to do for

certain applications. So how do we solve the problem?

The way to make the program work the way it's supposed to is to disable *MBASIC*'s internal counter with the statement WIDTH 255. This tells *MBASIC* not to throw in any linefeeds unless you want them. The WIDTH 255 statement will solve a multitude of similar problems. I use it as the first line of my programs.

Problems With Character String 9

MBASIC does funny things with commands that involve printing CHR\$(9). In graphics mode, trying to print the character associated with CHR\$(9) produces weird results. Sending a CHR\$(9) to a printer usually results in eight spaces (CHR\$(32)) rather than a CHR\$(9). What's going on?

Solution:

MBASIC interprets a CHR\$(9) as a TAB character. When a programmer asks *MBASIC* to print a CHR\$(9), *MBASIC* says "This programmer doesn't really want a CHR\$(9), he wants a TAB. I'll give this programmer eight CHR\$(32)s instead of a CHR\$(9)."

Well, that's fine, unless we want to do screen graphics, or graphics on a dot-addressable printer. In order to make *MBASIC* give us what we want, we must POKE a memory location to disable the TAB feature.

To disable the TAB on the video display:

POKE 16750, 195

To re-enable the TAB feature on the video display:

POKE 16750, 194

To disable the TAB feature at the printer port:

POKE 16623, 195

To re-enable the TAB feature at the printer port:

POKE 16623, 194

Poke the above locations whenever you want a literal CHR\$(9) and not a TAB or eightCHR\$(32)s.

Conclusion

I hope you have found the answer to that real nail-biter here. Keep in mind that the Osborne *User Guide* documentation on *MBASIC* is very fundamental in nature, and is not intended to cover all aspects of *MBASIC* or teach programming structure or technique. If you have experienced any of the problems covered in this article, you have probably outgrown the Osborne documentation of *MBASIC* and are ready for a complete and comprehensive book on the subject.

Gary Cuevas is a Software Support Specialist with Osborne Computer Corporation and resident *MBASIC* ace.

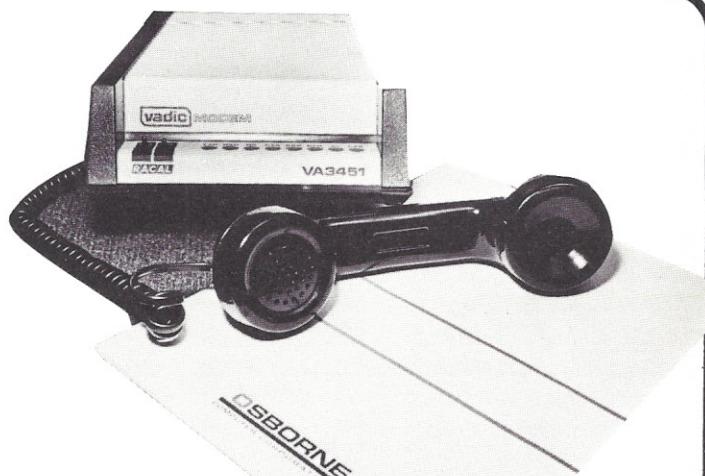
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Programming the serial port

Modifying the serial port for scientific test devices

This article explains how to modify the serial port's data word length, stop bits, and parity setting. Changing the Osborne 1's default specification of 8-bit data word, 1 stop bit and no parity is useful when interfacing to certain scientific test devices that have limitations in their interfacing options. These steps are simple and will take only a few minutes to perform.

The change permanently modifies the operating system (BIOS) with a new default value for the serial port. When you boot with the modified diskette, the modification is loaded.

To begin, you will need a formatted diskette in the B drive, and the following CP/M utilities on an otherwise blank diskette, with system tracks, in the A drive:

1. DDT.COM
2. SYSGEN.COM
3. MOVCPO.COM

Note: This modification is for the "1.3" BIOS. If you have a late model Osborne, or have the double density option installed, you may have a "1.4" BIOS. See Figure 1 for details.

If you have a 1.3 BIOS use **MOVCPO 60** and **CMP60.COM** as indicated below; else, substitute **MOVCPO 59 *** and **CPM59.COM** in the case of a 1.4 BIOS.

A > **MOVCPO 60** *

CONSTRUCTING 60K CP/M VERS 2.2
READY FOR "SYSGEN" OR
"SAVE 39 CPM60.COM"

A > **SAVE 39 CPM60.COM**

A > **DDT CPM60.COM**

DDT VERS 2.2

NEXT PC

2800 0100

S1FE9

1FE9 55 **xx** (xx is the code you are inserting.

1FEA 80 Refer to Figure 1 for a table

- ^C of 6850 control codes.)

A > **SYSGEN**

Operating System Generation Program
OSBORNE COMPUTER SYSTEM ONE

SOURCE drive (A or B) <cr> (reads from memory)

DESTINATION (A,B or RETURN to exit) **B**
Put DESTINATION diskette in B, then press RETURN
<cr>

DESTINATION (A,B OR RETURN TO EXIT) <cr>

The diskette in the B drive is now modified with the serial control code you specified.

System Technical Support Group, Osborne Computer Corporation



WHICH BIOS DO YOU HAVE?

If you don't know the answer to that question, do the following in order to find out which BIOS you are working with.

Boot up your utility system and then:

```
A>DDT
DDT VERS 2.2
.D0000
0000 C3 03 E5 (etc.) . . . . .
0008 (etc.)
0000 C3 03 E1 (etc.) . . . . .
0008 (etc.)
```

You should see something like one of the above. If in the third location following the **0000** there is an E5, you have a 1.3 BIOS; if there is an E1, then you have a 1.4 BIOS.

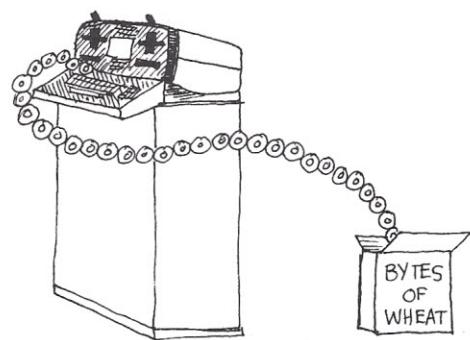
Figure 1

TABLE OF 6850 CONTROL CODES

data bit	parity	stop bit	baud rate	xx Hex
7	even	2	1200	41
7	odd	2	1200	45
7	even	1	1200	49
7	odd	1	1200	4D
8	none	2	1200	51
→8	none	1	1200	55
8	even	1	1200	59
8	odd	1	1200	5D
data bit	parity	stop bit	baud rate	xx Hex
7	even	2	300	42
7	odd	2	300	46
7	even	1	300	4A
7	odd	1	300	4E
8	none	2	300	52
→8	none	1	300	56
8	even	1	300	5A
8	odd	1	300	5E

The arrows point to the standard default settings. For further information on other codes, consult the Motorola 6850 specification sheet supplied in the Osborne 1 Technical Manual.

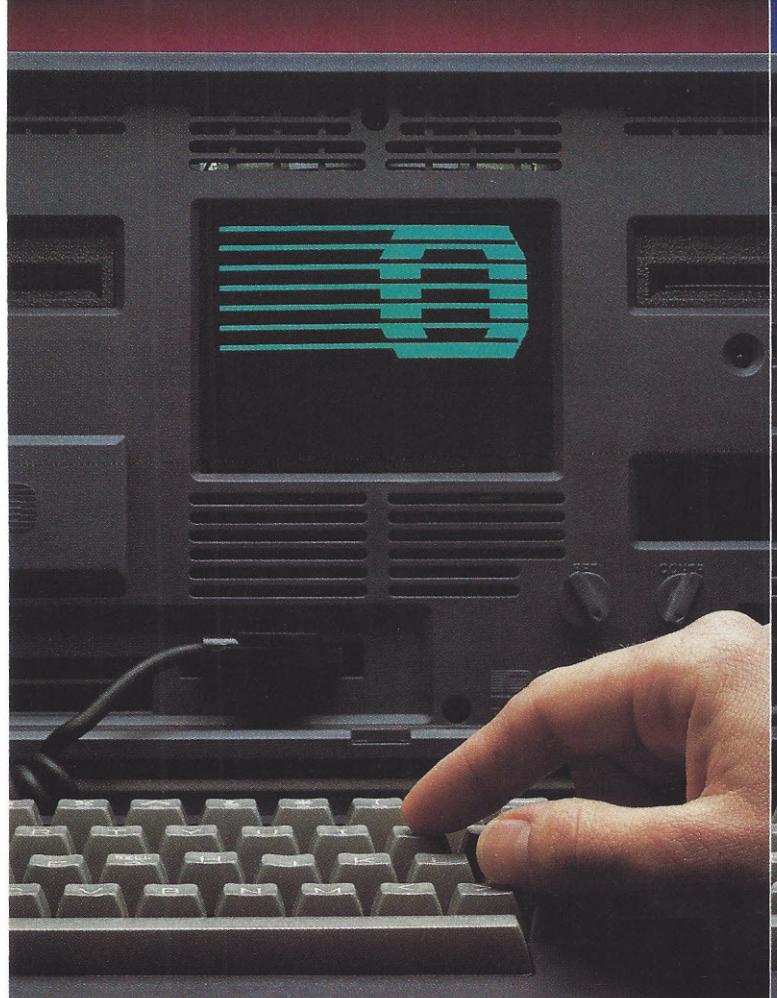
Figure 2



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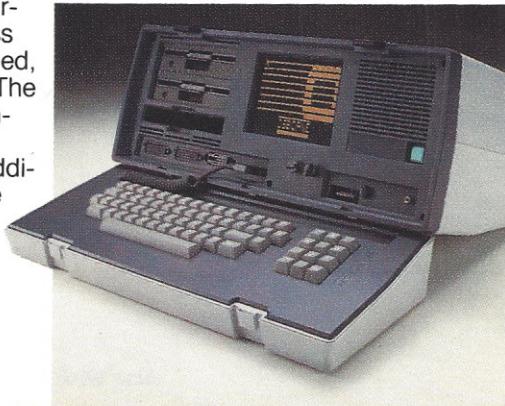
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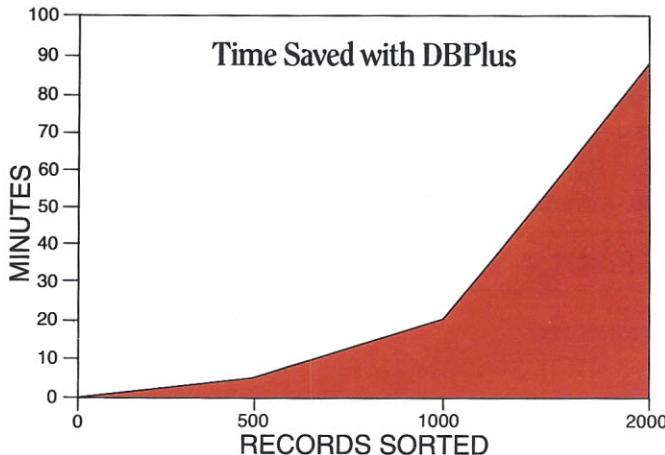


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Practical EDITING

Part II: the finishing touches

Richard Drakeford

This is the second of two articles addressing word processing for the independent writer.

The first article of this series provided a format for the entry of notes that facilitate additional editing. Two keystroke sequences for special function keys (SFKs) were introduced to facilitate the movement of full lines of text. Also discussed were the cutting of extraneous material, use of outlines and simple sorting techniques.

This article will cover a more sophisticated method of sorting and interfile editing techniques.

Hypothetical Sorting Bins

Besides posting material to the end of a file, you can set up physical locations where material can be stored by topic. Following is a useful semi-automatic method of sorting text into temporarily positioned "bins."

To do this, use *WordStar's* place markers (^K0 through ^K9) as sorting bins. The physical locations

may or may not correspond to final order of presentation.

Referring to the Editing Toolkit in Figure 1, you can see this operation uses function keys ^0 through ^6. Consider these keys as a system of cranes and conveyors picking up notes (or entire blocks) and moving them to any one of five locations.

Using our example, SFK 6 will set up place markers (1) through (5) as a stack of sorting bins wherever your cursor happens to be. The front of a file is a good place to put bins at first. Any previous bins are automatically eliminated.

Coursing through the file, position the cursor at the very first position of a note you want to move to a certain bin. Type ^0 to mark the front of the block. Now move the cursor down a line. (Remember to consider the trailing line as part of the note so that the independence of each note is maintained through repositioning.) To file this note, simply press the control key corresponding to the bin you wish to place it in. The note will be moved

to the place marker and cursor will be returned to where you are working.

The function key automatically marks the end of the block, moves the cursor to the designated place marker, moves the block to the cursor, and returns the cursor to the position where it was before the move. It also turns off the block markers so you won't accidentally move big blocks of text later.

You can sub-sort or change temporary bin categories at any time. For example, suppose you start with 100 notes and sort them into five major categories. In Bin 5, you may end up with 22 notes of introductory material. For the next sort, you could put the cursor at the top of the file (^QR) and press ^6 to stack your five empty bins for a sub-sort.

After sorting one category according to whatever criteria you deem appropriate, you can then re-position the sorting bin place-markers and sub-sort the gathered notes of any other category or sub-category.

This bin system for sorting can be used to move lines around on a single screen if desired. That application can be useful when sorting a short outline. Consider each line (or group of lines) as the "note" to be moved and position the cursor at the front of the line to mark the beginning of the block. Then position the cursor just under the line before hitting the control key to move the line.

Moving text around on a single screen is a good way to see the system in operation and gain confidence in its use.

Even though you've been cautioned to format notes as separate paragraphs, you may sometimes want to split a note and send just part of it to a certain bin. To split a note, you must first mark its opening with 0 and then mark its logical conclusion with two carriage returns. This splits the note. You should then make a trailing blank line and leave the cursor on the line below. By using your control keys, you can now send this note fragment to any one of your five bins.

All of these procedures can also be accomplished manually by marking and moving blocks, but linotext operations and the use of automatic sorting bins will speed things considerably.

Interfile Transfers

At times, you'll need to move blocks of text from one file to another. Perhaps, for instance, you've tidied up some material and want to take it out of rough notes and move it to a file where you're assembling a finished draft. To do so, simply gather the rough material into a single block, use ^KW to write the block into a temporary file (remembering to delete the block from the original file) and then move to where you want the block to end up. You can now use ^KR to bring over the temporary file.

Split Files by Topic

Before sorting a file according to

thematic content, you must first copy the entire file to a new file. If you are not yet in a file, use the "O" command. If you are already in an edit, use ^KO . (Be aware that ^KO does not save the file version in RAM, but rather copies the most recent disk file. If you have made changes during the current edit, make sure they have been saved.)

The next step is to delete everything except for material in a certain category from the original file. Save and rename the streamlined file with a label indicating topic. Enter your copy of the original file and delete the material you know is in your new file. Now make a new copy.

Remaining in the file you've just copied, you can now pick another category to retain, delete everything else and create a new topical file.

Following this procedure, you rapidly end up with a series of files segregated by topic. If the files are inconveniently small, you can quickly recollect and order them according to your needs.

"During note sorting you may prepare for future condensation by tagging candidate sections with a distinctive marker such as '#'... using Find and Replace to locate them later."

Work With Short Files

After material has been sorted into topical categories, consider splitting the file to keep files to a manageable size. Never hesitate to split a file if you can conveniently work on its segments separately; recombining files is easy for final print-out. Avoid the dreaded DISK FULL error message. Diskettes are fairly cheap, so don't cramp yourself and risk being unable to save some work.

For some operations, WordStar uses diskette space up to four times the size of the file being edited. It simultaneously keeps on diskette one BAK (back-up) file, the present version of the active file, a temporary output file created by ^KS and, at times, a scratch file for backward cursor movements. If you work on a 20K file, 80K could be required for normal operations on that file. Up to six 10K files are feasible if the diskette is kept clear by constant erasure of BAK files.

“Lest it be thought that uniform processing of word batches must necessarily result in a dull paste, remember that you can always hopper in spices.”

Actually, *WordStar* will never require that fourth scratch file for backwards movement if working on files short enough to be held complete in RAM. On the single density Osborne 1, after CP/M and *WordStar* are loaded there is room in RAM for files up to about 22K long, so the scratch file for backwards movement is seldom needed.

The comparison of the length of a file in bytes versus its equivalence in screenfuls depends on the amount of blank space that's inserted. Blank lines require only two bytes for carriage returns and line feeds. Partial lines truncated by carriage returns do not use up as many bytes either, but spaces inserted to indent or justify each count a byte. With a 52-column margin setting and justification off, each full screenful of text is equivalent to just over 1K, providing there are a few blank lines.

Working in the “N” mode, you can watch your status line for the exact count when entering text. Nine or ten screens of information is enough; beyond that, you run the risk of unnecessary DISK FULL error messages. To split a file, mark the target segment as a block, use \wedge KW to write it to a new file and use \wedge KY to delete it in the file you are in.

Fetching Files

To collect or recombine files is no problem. Select one file to be the “master” collector, enter it for editing and use *WordStar*’s \wedge KR to read other complete files into it.

The best way to fetch a single note that has strayed to another file is to read (\wedge KR) the whole file and block delete everything but what you want to capture. This works fine if your files are short. The more complicated alternative is to go into the object file, block-mark the desired material, send it to the temporary file, move into the collecting file and use \wedge KR to fetch the temporary file.

You can use the merge-print function to print a number of files in

order, by creating a command file which calls for other files as insert files. If you merge-print to diskette the effect is to concatenate all the files in order; just as though you manually collected them.

Remember that at the same time you may be stripping out note headings and remarks to yourself unless you suppress page formatting. (When you merge-print to diskette to strip out husk-like dot comments, make sure of formats. Leave out top and bottom margins and left page offsets or merge-print will put a lot of unwanted spaces into the new file, just as though it printed to paper.)

With the file now pretty much in order of presentation, this is a good time to convert from a note format to text for public consumption—a true first draft. This is easily done by making a copy of the file, omitting the dot command headings and administrative remarks. Print the file to diskette, formatting so as to leave out top page margins, bottom page margins and the left side page offset. Use the dot command “.mt 0, .mb 0 and .po 0” at the head of the file. You now have a text file to edit. The final editing steps are to condense, add and polish.

Condense

This is essentially micro-cutting. The idea inside a note or segment of draft is retained, but the raiment is tailored by trimming excess verbiage. Compare this to the full cutting operation where an entire branch of thought is pruned away and completely cleared out of the file. During condensation, the objective is a richer concentration of draft.

Repetitive automatic deletion of a particular word or phrase can be performed by the Find and Replace function (\wedge QA). Tell *WordStar* to find the offending word and replace it with a null by entering a carriage return in answer to the ‘Replace with?’ prompt. The computer then acts as a word-specific blotter,

rapidly sponging out only the targeted excess.

It should be mentioned here that although it's generally best to keep files short and to work with multiple files as a logical sorting technique, all files belonging to one piece of writing should be concatenated to use *WordStar's* global editing facilities. *WordStar* is global to a file; not a diskette, and an editing function will only repeat within a single file.

If diskette space is a problem, however, remember that your linked file need never be saved in its entirety. Bring together all the files you wish to operate on (up to 22K will fit in RAM), do your global edit function, then re-split the file and save it in its separate original segments by marking the edited blocks and overwriting the unedited original files. If you do this in a special file called, for example, "GLOBAL" which is never saved on its own, you gain the benefits of global editing while maintaining your material in short files.

A series of tests can be employed to help you clear your global text of verbiage. You can find every occurrence of a particular garbage word by setting up a $\wedge QF$ Find operation and repeating with $\wedge L$ until you get to the end of the file. Candidates for elimination are "very," "the fact that" and "as to." You can make up your own list of bugaboos and then try them one at a time. When a word is found by the Find command, the cursor ends up after the word. To delete a word to the left of the cursor requires two quick keystrokes: $\wedge A \wedge T$.

Two handy *WordStar* commands that come into play when you're condensing text are those which delete partial lines: $\wedge QY$, which deletes everything on a line to the right of the cursor and its mate, $\wedge Q \wedge -$, which deletes everything to the left.

During note sorting you may prepare for future condensation by tagging candidate sections with a distinctive marker such as "#". When traversing the file for another

The Editing Toolkit (Special Function Keys for Text Editing)

SFK0: $\wedge KB$
SFK1: $\wedge QS \wedge KK \wedge Q1 \wedge KV \wedge QV \wedge KH$
SFK2: $\wedge QS \wedge KK \wedge Q2 \wedge KV \wedge QV \wedge KH$
SFK3: $\wedge QS \wedge KK \wedge Q3 \wedge KV \wedge QV \wedge KH$
SFK4: $\wedge QS \wedge KK \wedge Q4 \wedge KV \wedge QV \wedge KH$
SFK5: $\wedge QS \wedge KK \wedge Q5 \wedge KV \wedge QV \wedge KH$
SFK6: $\wedge K1 \wedge K2 \wedge K3 \wedge K4 \wedge K5$
SFK7: $\wedge QS \wedge KB \wedge X \wedge KK \wedge QC \wedge KV \wedge QV$
SFK8: $\wedge QS \wedge KB \wedge X \wedge KK \wedge QX \wedge KV \wedge QV$

Use the Osborne 1's SETUP program to create these editing functions on a *WordStar* disk you reserve for editing.

(You might have another *WordStar* version for text entry, modified for smoother scrolling; and yet another version for formatting and printing, with special function keys devoted to repetitive tasks in those areas such as entry of print characters.)

This set of tools uses up the keystrokes available for special function keys. You can modify the toolkit if you want to automate other functions. For example, if you find four sorting categories sufficient, you might delete the functions assigned to SFK5 and set up SFK9 as " $\wedge JH2 \wedge OW \wedge OR52$ " to automatically format any draft file you edit to the configuration suggested in the article.

Make up your own editing tool box by inventing your own functions and trading off with those suggested here.

Figure 1

purpose if you notice bloated sections but don't have the time to stop and take care of them just then, simply mark them for future reference. When you're ready to condense, use $\wedge QF$ and $\wedge L$ to relocate those passages.

Add

Lest it be thought that uniform processing of word batches must necessarily result in a dull paste, remember that you can always hopper in spices.

When all the condensing is done,

sketchy notes must often be embellished. Original thoughts may need to be fleshed out with examples, analogies, comparisons, or citations of authority. Sections needing such enhancements can be marked for future reference.

To keep the drafting and editing functions separate in your own mind, it may be convenient to clearly label development material. It can always be fetched when sufficiently polished.

If at any time you've used short-hand abbreviations to speed text

"I expect that readers will devise (such) secondary techniques for themselves and invent new editing techniques to boot."

entry, you should, of course, return your truncations to their proper length before completing your edit. Suppose, for example, that while taking notes you used "B1" to stand for the name "Blackstone." By using $\sim QA$ you can now find every instance of the abbreviation and change it automatically. Remember to combine files for global edits.

Similarly, perhaps during drafting you have left some rough spots to be filled in later. If so, use $\sim QF$ to proceed directly to such entries. Enclosing such notes in brackets will facilitate your efforts since $\sim QF$ can then be directed to locate the left bracket.

You can automate the repetitive addition of material by using $\sim QA$ to slip it in, even if you don't know exactly where you'll be putting it. To the FIND? query, just reply with a null (carriage return). To REPLACE WITH?, type the phrase you will insert repeatedly. For options, use "N". Then as you manually scout through the file, you can insert your boilerplate phrase by placing your cursor wherever you want and pressing $\sim L$.

Polish

To "polish" is to go through the entire manuscript cleaning up

stylistic inconsistencies, grammatical gaffes and misspelled words. The operations of polishing text are repeats of preceding operations (cutting, reordering, condensing, adding) only now on the very finest level—manicuring line by line, word by word.

Decide whether the finish of the final product is to be matte or glossy, scholarly or slick and examine the entire piece for consistency towards that end. Toning shows a certain attitude towards the material and the audience, and contrast and graininess may be reduced or intensified. Final polish is most affected by the vocabulary employed and an out-of-sync phrase may be automatically replaced throughout the file by a more felicitous selection drawn from a thesaurus.

Winding Up

Finally, at some point, the piece is done. Perhaps outside exigencies prevail, such as deadlines to meet. Perhaps the file can serve as it stands. But, for whatever reason, let's assume development must be halted. The editing is stopped, the work is fixed by $\sim KD$. But as in the beginning, the file may be further developed or reworked at any time. If presentation to an outside audience is planned, the next major stage—final formatting for print-out—can be contemplated.

In review, it can be seen that more space has been given to the topic of reordering than to cutting, condensing, adding and polishing. This does not reflect the respective importance of each function, but rather relative involvement of the computer as a tool. Polishing, for example, must take place mostly in the mind and involves little which is yet subject to automation.

The Editing Toolkit which enables semi-automatic linotext moves and hypothetical sorting bins is not the last word in special function keys to be used with *WordStar*. Neither is their use limited to the original ends for which they were designed.

Already I use the sorting bin system as an aid to selection/cutting. When first running through a note file, it is easy to send stuff to the "definite retention" bin, the "possible retention" bin and the rubbish bin. One big block delete command then clears out the rubbish in one shot. I expect that readers will devise such secondary techniques for themselves and invent new editing tools to boot.

Author's Note:

I recently had my Osborne upgraded to double density. This affects the editing toolkit special function key (SFK) setup as follows:

The new version of CP/M furnished with double density evidently trades off some SFK character spaces for other features. The total number of keystrokes SETUP can put in SFK's is reduced from 106 to 85.

Unfortunately the entire editing toolkit does not fit in this reduced space. If you want to work in double density strip down the toolkit by reducing the number of sorting bins to four. Blank SFK 5. Cut " $\sim K5$ " off the end of the sequence assigned to SFK 6. Blank SFK 0. (This means that you mark block beginnings with WordStar command sequence $\sim KB$ rather than a SFK.)

Of course you can make your own tradeoffs. If you want more bins, you can sacrifice the "linotext" special function keys, SFK7 and SFK8. The principles still apply and the adjustments for double density are minimal.

Alternatively, do your note sorting operations in single-density format and later PIP files over to a double-density diskette when they are "complete" and ready for output formatting.

Richard Drakeford is a retired army officer who lives in the San Francisco East Bay area. He has published fiction under other names in men's magazines. After retiring in 1971, he attended the University of California at Berkeley, obtaining a degree in Rhetoric in 1975 and a law degree in 1978. □

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Informal Outlining with WordStar

Roderic Knight

Preparing a lecture, taking notes on a textbook assignment, drawing up a meeting agenda? For these and many other tasks, you are likely to end up with an informal outline, without numbers and letters, but with indentations and tick marks or dashes for readability.

You can produce this outline format easily, complete with tick marks entered automatically, by setting up three or four functions keys on your *WordStar* diskette and putting a customized ruler line at the beginning of the file.

The finished product will look like this:

Automatic Outline Format

- At the end of each line or passage in the outline, do not press <return> unless the next entry is to be at the left margin.
- If it is to be indented, press control 1, 2, 3, or 4, according to the level of indentation wanted.
- The two entries above were begun with a ^1 entered at the end of the line above them, in place of a return.
- These two entries were begun with a ^2, giving the second level of indentation.
- In like manner, this line was entered with a ^3.
- And this, with ^4.
- As many as six levels may be specified,

but for most applications, four is probably enough.

-The function that enables this format is the paragraph indent, ^OG. The method is explained below.

When used manually, the paragraph indent works as follows: For each ^OG entered, the left margin is temporarily moved over one tab stop so that as word-wrap is accomplished, the left edge of the text aligns at the tab stop. A carriage return cancels the indent. To indent to the second tab stop, two ^OGs must be entered before typing the line. This is quite cumbersome and provides no tick marks at the beginning of each entry.

To set up your *WordStar* diskette to accomplish this automatically, place the CP/M System diskette in Drive A and your *WordStar* diskette in Drive B. At the A>, type SETUP and follow the instructions. The answer to the question "What disk do you want to configure?" is B, unless you are running SETUP for the first time, in which case you must answer A (this takes the setup from the CP/M diskette, which you modify and save on B).

Following the instructions, set up function keys (SFKs) 1-4 as follows:

1. <CR> ^Og- ^Og
(That's a dash between the two ^OGs)
2. <CR> ^Og ^Og ^Og- ^Og
(Three ^OGs before the dash)
3. <CR> ^Og ^Og ^Og ^Og- ^Og
4. <CR> ^Og ^Og ^Og ^Og ^Og ^Og- ^Og

Note that for each indent, two more ^OGs must be

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entered before the dash, so that the third indent has five, the fourth has seven. This is necessitated by the customized ruler line used for this format. It looks like this:

----!----!----!----!----

Create this ruler line at the beginning of a file by typing it in, then with the cursor still on the line, press ^OF . After this it may be deleted (^Y) or ignored by the printer (advisable if you anticipate going back to this file later) by inserting an "ignore" command ..^P<CR> at the beginning of the line. Even simpler, if you use the outline format often, put a file called RULER containing this ruler line on the *WordStar* diskette and simply call it up with the Read File command (^KR A:Ruler) at the beginning of your outline file, then put the cursor on it, pressing ^OF to enter it.

Comparing the SFKs and the ruler line, we can now see how the system works. Pressing ^l at the end of a line enters a <CR> , and the ^OG types a dash at the first tab stop and commands the text to align at the second tab stop, i.e., in the column just next to the dash. The other function keys accomplish the same thing, moving past the two tab stops at each indent position--hence the need for two more ^OGs for each indent. At this rate, all 96 characters available for function keys will be used up with six indents. But four indents require only 48 characters, leaving ample room for other setups.

Text in outline format can be edited and reformatting to different margins, providing the following guidelines are followed:

1. Changes can be made while entering text. The paragraph indent (visible as a bright portion of the normally dim ruler line) will be retained as long as a <CR> is not executed. Should you execute a <CR> by mistake, place the cursor anywhere in the line above, manually enter enough ^OGs to light up the ruler line to the correct indent, and continue typing.
2. To insert an entire entry, put **INSERT ON**, move cursor to end of previous entry, then hit appropriate indent number for the entry to be inserted.
3. To insert something within an existing entry, proceed as for (1) above, manually entering the required number of ^OGs for the existing indent. **INSERT** need not be on, since the lines below the one being changed will be pushed down anyway.
4. Reformatting to different margins or correcting any mistakes in indentation caused during editing is accomplished by resetting the *left* margin to the indent point (put the cursor on that point, press ^OL<ESC> , then reformatting the entry (^B). Reformatting a long outline to a wider or narrower right margin could be time consuming, so it is best to create it originally at the margin desired. If reformatting is necessary, the job can be simplified by resetting the left margin to the first indent, skipping through the outline to all of the entries at that indent and reformatting them, then resetting the left margin to the second indent and reformatting all of the entries at that point, etc.

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5. Resetting the left margin is also an alternative method for step (3) above (editing an existing entry).

Roderic Knight is an associate professor at the Oberlin Conservatory of Music and president of the ^OB ^OS Group (Oberlin Osborne Group) in Oberlin, Ohio.

Graphics With WordStar

Paul B. Wiske

WordStar is by no means a graphics package, however, its capabilities should not be underrated. The NYOUG/NEWS masthead shown below was produced under *WordStar*.

NYDUG / NEWS

System requirements are a printer that can respond to *WordStar* variable .CW (character width) and .LH (line height) dot commands. This disqualifies most, if not all, dot matrix printers, some daisywheels, and all daisywheel printers improperly installed for *WordStar*. Dot matrix printer owners should use their ingenuity. (Use your printer's horizontal and vertical incremental motion codes, or dot addressable graphics.) The NYOUG/NEWS would welcome an article on graphics with a dot matrix printer and the Osborne.

For the masthead, large block letters were created using the “=” sign as the graphic character. Each let-

ter is 20 characters across and 16 lines down. To create the block letters, I used the "D" edit mode for ease in tracking column and line positions. The NYOUG and the /NEWS segments of the masthead each required about 124 characters. The right margin (^OR) should be set, therefore, to 128 columns. Once the two segments were created, the /NEWS was appended, line by line, to the end of NYOUG by using block commands. The joining of the two segments was performed under the "N" edit mode to eliminate any margin settings found in the "D" edit mode. When the two segments are merged the resultant line is almost 256 characters wide, requiring two lines of display on the monitor, which produces a visually undecipherable mess. Care must be taken, therefore, to insure that line 1 of the /NEWS segment is properly appended at the end of line 1 of NYOUG. Fortunately, the "N" edit mode status line does show line numbers.

```
.mt 0
.lh 2
.cw 3
.op
```

Figure 1

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For print-out, compression was achieved by increasing the number of lines per inch and of characters per inch. Figure 1 shows the "O" of the masthead printed at 12 characters/inch and 8 lines/inch, as well as the .LH and .CW dot commands used in the actual printing of the masthead. Recall that the .LH command expresses line height in increments of 1/48". The .CW command gives character width in increments of 1/120". In the print-out, a .LH 2 defines a line height of 2/48", or 24 lines/inch. Similarly, .CW 3 sets character width at 3/120", or 40 characters/inch.

Variations on this theme are infinite. Output shape can be altered by choosing different line heights and character widths. Also available is boldface print. In the masthead, the "O" and "/NEWS" were printed in boldface. To be more elaborate, consider variations on the "=" sign as the graphic symbol. Replacing the "=" with "= ^H-", results in an overprint of the "-" on the "=" and produces a virtually solid block letter. (Hint: remember WordStar's ^QF, the global find and replace command.)

One final cautionary note: long and complicated designs are voracious consumers of print ribbon. For trial print-outs, and there will be many, I suggest removing the ribbon from the printer and using carbon paper instead. Happy putting!

This article was reprinted from NYOUG/NEWS, the newsletter of the New York Osborne Users Group. Paul B. Wiske is the editor of NYOUG/NEWS.

BREAK.KEY

Jonathan Block

One question that comes up often on various computer bulletin boards and at user group meetings is how to generate a "BREAK" from a computer that does not have that function built in. I followed this discussion with mere curiosity until last month when I suddenly needed a break. I had been using the DIALOG Information Retrieval System which, like many remote systems, does not respond to ^C as an interrupt. With a charge for connect time in some databases running as high as \$300 per hour, a break key was no longer a curiosity, but a necessity.

A BREAK is not an ASCII character, otherwise I could have generated it directly from the Osborne's keyboard. For those of you who are looking for the "missing" ASCII keys, they are all hidden on the keyboard. Your manual neglects to give you the following information:

Decimal	Hex	ASCII	Keystroke
96	60	'	^ =
123	7B	{	^ ,
125	7D	}	^ .
126	7E	~	^ /
127	7F	DEL	^ ?

But back to the break... Dana Ellingen, at DIALOG, helpfully explained to me that a "BREAK" is a "200ms low tone that dates back to Morse Code." My first idea was to try to use my Hayes Smartmodem's ability to

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generate tones and pulses to fake a break. Another attempt was made to send NULLs. Neither of these approaches succeeded, so I called Hayes to see if there was any way to get the modem to generate the signal. Their answer was a simple no. "It's a function of your RS-232 port," they said. This led to a phone call to Phil Jones in the Systems Support Group at OCC (who has been a great source of help) and the news from him that the Osborne RS-232 did not support the break function. It is only available through the Modem port.

Owners of the COMM-PAC modem, which uses AMCALL, do have access to the break. I do not own the COMM-PAC, and love my terminal program—OTERM405—a public domain program for the Osborne by Michael Rubenstein that is superior to anything else out there. You should be able to get it through your local user group library. It supports both the Christiansen CRC protocol and CompuServe's CIS protocol, allows split screen management so you can review the log of the session while communicating, and allows you to program sign-on messages. It's also well documented.

I recalled that Stephen Stimac, backbone of the North Seattle Osborne User's Group in Washington, had mentioned he was working on a Modem Port <=> RS-232 adaptor, so I gave him a call to see if he could implement the break key for me. He had just received his prototype circuit boards when I called and described my problem. "Give me twenty minutes and call me back," he said. When I called back he had a working break key. I've been using the adaptor for over a month now with nothing but pleasure.

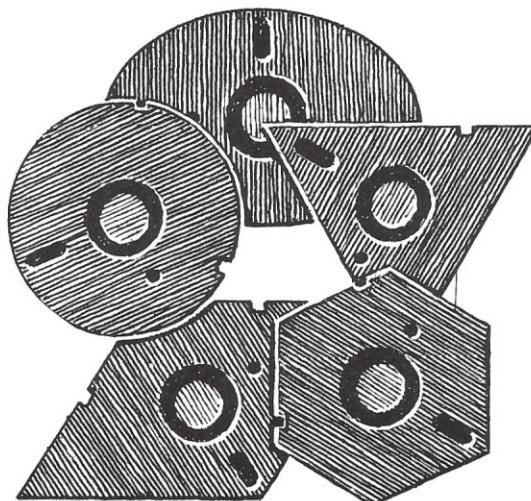
The adaptor is a small blue box which fits easily

into the diskette storage space on my "original" beige-case Osborne. It has two short ribbon cables, one of which plugs into the Osborne Modem port and the other of which receives the RS-232 cable from my modem. On the front of the box is a little red button which is my break. Inside is a neatly assembled circuit board and a set of dip switches.

The adaptor is available from: Image Sales, 1410 N. 85, Seattle, WA 98103. The price is \$65.

I encourage anyone who needs a break to look into this great little product. Oh yeah, it also frees up your serial port allowing you to run a serially-interfaced printer and a modem without buying a "T-Switch" or constantly switching plugs at the RS-232.

Jonathan Block is the librarian of the Central Illinois Osborne User Group.

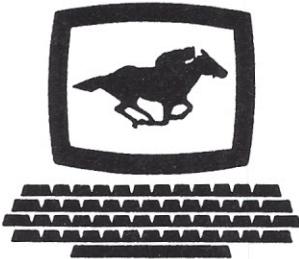


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The Processed Word

Electrify your spelling

the ins and outs of spelling checkers

Barbara Elman

Good writers are rarely good spellers. As computerized typist to Hollywood's finest scribes, I learned fast that correcting their spelling and punctuation was an essential part of my job. Now many of these writers have computers of their own—especially portable Osbornes. Fortunately, dictionaries have also gone on-line to catch the hidden typos human eyes invariably miss.

Before you give away your worn-out Webster, be advised that electronic spelling checkers are far from foolproof. Even the fancy ones require your interaction, and they all demand the personal touch after proofing to make sure you don't ignore typos they are not designed to spot.

What Spell-checkers Don't Handle

The most obvious of these word gremlins are homonyms—words that sound the same but are spelled differently. I kept track of potential homonym problems in a document and found fifty different cases within ten pages. They include here/hear, its/it's to/too/two, be/bee, capitol/capital and so on.

What this means is you can't compose, spell-check and print your text without reading it in context to assure the correct word is in the right place.

Then there are words that look similar but for one or two letters—the/then/they, there/they're, a/and/an/ad, his/has, wood/word/wore. Unless you're a gold medal typist, I bet these kinds of errors fill your pages. So unless you type very slowly, or stop composing to correct them as soon as they appear, your spelling checker will not help you.

Another common error occurs when you accidentally input a "-", "/" or other non-alphanumeric character in the middle of a word. The spelling checkers I tested either ignored the entire word or treated the portion after the symbol as incorrectly spelled. Only two of my four test programs allowed viewing the word in context, and then only if I had thoughtfully specified context mode in front, an optional feature. This works best with short documents because the context mode fills more RAM than do straight error listing and marking modes.

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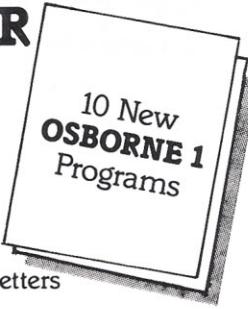
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In either case, none of my programs let me back up to eliminate the offending symbol (usually a "/", which was often the only spelling error) and correct the entire word. This meant fixing these words via *WordStar*—a workable but inconvenient choice.

Spelling checkers are also incapable of finding words you have accidentally typed twice in a row, those left in during revision that no longer read properly (such as "and but"), or those unintentionally left out. What they do best is check the spelling of each word against their own dictionary and against those dictionaries you compile, then mark these words in your documents for later correction. While many of them boast 40,000-plus words—a lot when you're composing them but few compared to the paper dictionaries' 80,000-plus—they all have the ability to add frequently-used words to the main list or compile custom dictionaries. This is essential so your frequently-used, correctly spelled words don't get marked as misspelled if they aren't in the original dictionary. All proper names, legal, technical, medical and foreign words fall into this category. If you write film scripts, novels, or business proposals, it's a good idea to input all proper names in an auxiliary file before spell checking, or they may all be flagged as wrong.

In my case, the document tested was an interview with a Huichol (Native American) medicine man, who used lots of Indian terms neither I nor my dictionaries could pronounce, much less spell. By asking the program to add them to temporary dictionaries the first time they appeared as errors, they were later ignored unless spelled incorrectly.

Another thing spelling checkers don't do is check numbers—a transposed address or zip code in mailing lists or dollar figure in a proposal must be personally proofed against hard copy. Maybe when we can input by talking to our computers, this too will be resolved.

Most spelling checkers work in similar fashion—they compare root, prefix and suffix of each word in your document with their internal dictionaries. (Another note of caution: this means if the root, prefix and suffix are all correct but do not

make up a word when strung together, it will *not* be flagged. Therefore, the word 'prerelationment' will be treated as correct—if indeed the main list includes "relation"; one of my spelling checkers did not! So the differences between programs lie more in technique than capability or efficiency, and the less expensive ones are not necessarily worse than the higher-priced brands. Oddly enough, my test programs all found a different number of misspelled words in the same document. They also all skipped the types of errors noted above.

The Nitty Gritty

The spelling checkers I tested come formatted for Osborne, and are useful, easy-to-learn products. For the record, they are *Spellguard* (Osborne Computer Corp., 26538 Danti Ct., Hayward, CA 94545—\$295), *Spell* (The Software Toolworks, 14478 Glorieta Dr., Sherman Oaks, CA 91423—\$49.95), *Proofreader* (Aspen Software, PO Box 339, Tijeras, NM 87059—\$50), and *The Word Plus* (Oasis Systems, 2765 Reynard Way, San Diego, CA 92103—\$150).

To be as scientific as possible, I ran the same text through each program and stored the lists of errors on diskette (except in the case of *Spellguard*, which lists only to screen on request) as well as printing them on paper to compare their results. This was the first time I used any of them, and I admit to skimming the manuals rather than reading cover to cover before testing the software, ignoring what didn't apply to my immediate situation.

The *Spellguard* manual is the most complex, running over 60 pages and primarily detailing how to revise dictionaries, as the proofing feature is relatively simple to use. It has an excellent index, a glossary of terms, a "hints" section and duplications of menus for each section of the program. I wish it had a quick reference card of these screens separate from the explanations, but I found what I needed without much delay.

The other manuals were simple, short (15 to 48 pages), and not slickly prepared (i.e., not typeset or glamorously bound). *Proofreader's* manual includes an index, but I

used the table of contents to find items quickly. *The Word Plus* also has a good table of contents and is quite detailed. *Spell's* manual is shortest of all and required the least of my attention during software use. This may be due to *Spell's* simplicity of features and functions, but the manual coherently covered the basics up front and discussed possible problems before giving examples. Both *Proofreader* and *The Word Plus* are more complex program packages, whereby you can run several features concurrently and must make some choices about context mode vs. mere word listings up front. Occasionally I had to search for basic procedures within explanation and details, and I would have preferred quick reference guides at the front rather than back of the manuals. But once I ran them, I knew how to operate the programs in full.

Of my 2635 total words, *Spell* found 110 words "not recognized," *Proofreader* found 654 "different" words with 120 "unknown" words, *The Word Plus* found 687 "unique" words with 147 "unmatched" words, and *Spellguard* found 644 words "mismatched." The running time to match text against dictionaries was not appreciably different between them—ranging from 40 seconds to a full minute for 8 pages with lots of unusual words and typos.

Except for *Spellguard*, the programs save the error lists as separate files on request, and also mark typos in the text with a "#", "*", or "@" flag. This may allow easy search via word processor in theory, but requires hitting ^QF* each time I moved to the next typo under *WordStar*. Inputting this character string into a number key via the *CP/M SETUP* utility cuts it down to two keystrokes.

To run the spelling check under *CP/M*, you input the program name, text name, and (if desired), new document name for error word list. If your program does not require the text to be on the program disk (of my four, only *Proofreader's* Proof-Edit interactive review mode needed this), it will reside on the B drive, so be sure to specify B:TEXTFILE.EXT to avoid errors before you even start. To save

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the separate error list to Drive B, specify it when you name the error text file (B:ERROR.WDS) in the fashion the program desires.

All of the reviewed programs listed the words in alphabetical rather than consecutive order for proofing on-screen or printing to hard copy. If you wish to see your errors in context mode (such as with the PROOF-EDIT in *Proofreader* or REVIEW in *The Word Plus*), make sure you read the manual thoroughly to learn what must be specified before running the program so you don't find yourself in the spelling check and unable to view context mode as well. Each program deals with this differently: *Proofreader*'s PROOF-EDIT runs each line of text on-screen until it hits an error, so you actually see the entire document, while *The Word Plus* shows the line where the misspelling occurs on request only, if you have specified "Save Context Mode" in front. Again, this is merely a difference in technique, and I found them to be equally useful in action.

Like other spelling programs, those reviewed included the basic abilities to mark errors, input new

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A bowling scorekeeper

using *SuperCalc* in the big leagues

Walter B. Novinger

I was recently asked to design a scorekeeping program for a friend who coaches a high school bowling team. After analyzing his needs, I chose *SuperCalc* as the language in which to write the program; using *BASIC* would have entailed at least twice the effort. This article describes the resulting program, some of the more obscure problems I encountered in writing the scorekeeping model, and a few hints that make the Osborne 1 especially suitable for *SuperCalc*.

Getting Started

Figure 1 shows the spreadsheet presented by BOWLING. The formulas, protected cells and column widths have all been indicated. Cells are protected using the /P(rotect) command to prevent the scorekeeper from accidentally changing formulas and the bowling team's names.

The lower part of the bowling spreadsheet is identical to the first except that no names are included. The names will be filled in at the beginning of the match for the opposing team's bowlers.

The cells in column E contain the sum of the three games bowled, while cells in column G contain the count of the non-blank (score-containing) cells in the same range. The I column cells use *Supercalc's* MAXimum function to determine the high game bowled by each player in the three-game series. Column H, where the bowler's average is computed, probably looks a bit strange. If *SuperCalc's* AVERAGE command is used, ERROR messages display in column H when a scoreless spreadsheet is called up, as division by zero is not allowed. The ERROR display disappears as soon as scores are keyed in, but it may be disconcerting to the novice user.

The IF 7-10 Split

I also tried using a formula with an "IF" statement:

$Hn = IF(Gn = \emptyset, \emptyset, AVERAGE(Bn:Dn))$

According to the documentation the IF function will evaluate the first expression ($Gn = \emptyset$) and use the second expression (\emptyset) if the result is true. If the first expression evaluates false, the third expression ($AVERAGE(Bn:Dn)$) will be used.

Column Width

	10	5	5	5		6	1	5	4	5
1	A	B	C	D	E	F	G	H	I	J
11 SuperCalc Bowling Scorekeeper										
2 UPTOWN H.S.										
3 Date ---										
4			Games			Total	1 Num	Avg		High
5	Name	1	2	3			1 Games			Game
6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
7	Don	190	188	210		SUM(B7:D7)	1 COUNT(B7:D7)	E7/MAX(1,67)		MAX(B7:D7)
8	Tim	162	200	205		SUM(B8:D8)	1 COUNT(B8:D8)	E8/MAX(1,68)		MAX(B8:D8)
9	Matt	170	186	181		SUM(B9:D9)	1 COUNT(B9:D9)	E9/MAX(1,69)		MAX(B9:D9)
10	Susan	222	209	230		SUM(B10:D10)	1 COUNT(B10:D10)	E10/MAX(1,610)		MAX(B10:D10)
11	Steve	157	171	177		SUM(B11:D11)	1 COUNT(B11:D11)	E11/MAX(1,611)		MAX(B11:D11)
12	Moose	244	263	287		SUM(B12:D12)	1 COUNT(B12:D12)	E12/MAX(1,612)		MAX(B12:D12)
13	John D.	199	230	163		SUM(B13:D13)	1 COUNT(B13:D13)	E13/MAX(1,613)		MAX(B13:D13)
14	Diane	159	170	210		SUM(B14:D14)	1 COUNT(B14:D14)	E14/MAX(1,614)		MAX(B14:D14)
15	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
16	TOTALS	SUM(B7:B14)	SUM(C7:C14)	SUM(D7:D14)		SUM(E7:E14)	1 SUM(G7:G14)			MAX(I7:I14)
17	Team avg.....						E16/MAX(1,616)			
18	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
19	19 SuperCalc Bowling Scorekeeper									
20	Opposing Team:	DOWNTOWN H.S.								
21			Games			Total	1 Num	Avg		High
22	Name	1	2	3			1 Games			Game
23	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
24	Mongo	167	183	256		SUM(B24:D24)	1 COUNT(B24:D24)	E24/MAX(1,624)		MAX(B24:D24)
25	Judy	198	231	202		SUM(B25:D25)	1 COUNT(B25:D25)	E25/MAX(1,625)		MAX(B25:D25)
26	Dave	200	169	200		SUM(B26:D26)	1 COUNT(B26:D26)	E26/MAX(1,626)		MAX(B26:D26)
27	Fred	140	152	138		SUM(B27:D27)	1 COUNT(B27:D27)	E27/MAX(1,627)		MAX(B27:D27)
28	Popeye	226	250	300		SUM(B28:D28)	1 COUNT(B28:D28)	E28/MAX(1,628)		MAX(B28:D28)
29	Wimpy	178	200	156		SUM(B29:D29)	1 COUNT(B29:D29)	E29/MAX(1,629)		MAX(B29:D29)
30	Olive O.	74	66	106		SUM(B30:D30)	1 COUNT(B30:D30)	E30/MAX(1,630)		MAX(B30:D30)
31	Brutus	231	266	125		SUM(B31:D31)	1 COUNT(B31:D31)	E31/MAX(1,631)		MAX(B31:D31)
32	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
33	TOTALS	SUM(B24:B31)	SUM(C24:C31)	SUM(D24:D31)		SUM(E24:E31)	1 SUM(G24:G31)			MAX(I24:I31)
34	Team avg.....						E33/MAX(1,633)			

Format all cells with the INTEGER command.

Figure 1



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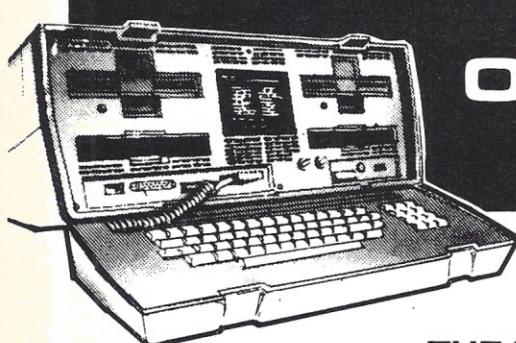
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Imagine my surprise when ERROR still appeared with no scores present! Apparently, *both* expressions contained in the IF function's list are evaluated before the final result is assigned to the cell, resulting in an ERROR message because of division by zero. *SuperCalc's* IF function is operating counter to all programming languages such as BASIC, Fortran, and Pascal.

Until this peculiarity of the IF function is fixed, keep in mind that *both* expressions contained in the IF function's list will be evaluated before the final result is assigned to the cell. If an error could occur due to the nature of the data, watch out.

(*SuperCalc version 1.12, the current Osborne 1 SuperCalc release, has fixed this bug.*—bb)

The MAX Function

Taking into account the foregoing two discussions we see that cell Hn contains the formula:
En/MAX(1,Gn).

Which uses the MAX function to assure that the divisor is never zero (because MAX(1,0) = 1). While this is certainly less elegant than the (intuitive) use of the AVERAGE function, the result is what we desire.

The rest of the BOWLING model should now be easy to understand, as the calculations performed are merely variations on the theme already discussed.

Miscellaneous Commands

Because the model works entirely in INTEGER format (including rounding of the averages), the command /F,G,Ker> should be entered prior to entering the formula.

To make the screen less cluttered, the command /G,B (turn off the border display) should be given after the model is completely entered and its operation verified. While entering the model's formula, make use of the REPLICATE and COPY commands to speed entry.

Helpful Hints

To enter the names of the opposing team's bowlers, give the command =A24 to move the active cell to the top of the second screen. Enter the names of the rest of the

players on the opposing team and return to the "home" team screen with the command =A1.

As the bowlers complete each game, enter their scores in the appropriate cells by positioning to the cell with the arrow keys and entering the score. The worksheet will be automatically updated after each score entry, giving the scorekeeper a running statistical picture of the match, game-by-game. **Important:** The Team Avg. display will lag behind the actual value by one entry due to *SuperCalc's* ordering of calculations. To assure that the value is accurate, use the ! (calculate) command to get the entire worksheet up-to-date.

Function Keys

To make the scorekeeper's job easier, the Osborne-supplied SETUP program may be used to assign often-used commands to the function keys on the diskette described above. I have the keys programmed as shown in Figure 3.

SFK's 3 and 4 contain the control characters ^L and ^J, obtained by pressing the right-arrow and down-arrow keys respectively. The seven blanks contained in SFK 4's codes are necessary to give *SuperCalc* time to write the opponent's screen properly. Both of these keys leave the cursor set to the first player's first game cell for convenience.

Walter Novinger is a Senior Analyst at Shaker Computer & Management Services, Inc. in Niskayuna, New York. Mr. Novinger, who has extensive experience in graphics, telecommunications, and micros, enjoys traveling about the world with one of his four Osbornes.

SuperCalc Bowling Scorekeeper								
UPTOWN H.S.								
Date ---- Feb 22								
Name	1	2	3	Total	Num Games	Avg	High Game	
Don	190	188	210	588	3	196	210	
Tim	162	200	205	567	3	189	205	
Matt	170	186	181	537	3	179	186	
Susan	222	209	230	661	3	220	230	
Steve	157	171	177	505	3	168	177	
Moose	244	263	287	794	3	265	287	
John D.	199	230	163	592	3	197	230	
Diane	159	170	210	539	3	180	210	
TOTALS	1503	1617	1663	4783	24			287
Team avg.....					199			

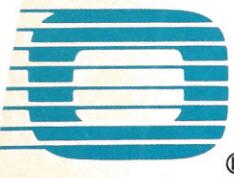
SuperCalc Bowling Scorekeeper								
Opposing Team: DOWNTOWN H.S.								
Name	1	2	3	Total	Num Games	Avg	High Game	
Mongo	167	183	256	606	3	202	256	
Judy	198	231	202	631	3	210	231	
Dave	200	169	200	569	3	190	200	
Fred	140	152	138	430	3	143	152	
Popeye	226	250	300	776	3	259	300	
Wimpy	178	200	156	534	3	178	200	
Olive O.	74	66	106	246	3	82	106	
Brutus	231	266	125	622	3	207	266	
TOTALS	1414	1517	1483	4414	24			300
Team avg.....					184			

Figure 2

Shaded cells indicate protected entries.

Key	Function	Codes
1	Load BOWLING	/LBOWLING,A
2	Blank all scores	/BB7:D14<cr>/BB24:D31<cr>
3	GOTO "home" screen	=A1<cr> ^L ^J ^J ^J ^J ^J ^J
4	GOTO opponent screen	=B24<cr> ^L ^J ^J ^J ^J ^J
5	Display to printer	/ODALL,P<cr>

Figure 3



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DataStar is an easy-to-learn, versatile and comprehensive data entry program, retrieval and update system for your Osborne. DataStar handles recordkeeping applications from initial form design through updating, addition/deletion, and search/retrieval of records. DataStar is designed to support speed and accuracy, allowing fast typists to operate at their best rate. The programs comprehensive HELP messages and instructions also provide the assistance the inexperienced user needs. (*MicroPro™*)

Disk Doctor™

This program reclaims damaged diskettes and allows you to recreate accidentally erased files. Disk Doctor helps the Osborne user to restore damaged or faulty diskettes to a usable condition, recovering as much data as it can. As an added benefit, Disk Doctor can also be used to certify new diskettes and eliminate any bad sectors before they can cause problems. (*SuperSoft™*)

Footnote™

Footnote numbers and formats footnote calls and the actual words in WordStar text files. Footnote numbers notes consecutively, and formats the file, placing the notes at the bottom of the appropriate page, or, at the user's option, moving them out of the text to a separate footnote file. (*Pro/Tem Software, Inc.™*)

Milestone™

Milestone is used for planning priority scheduling and tracking of small projects on your Osborne computer. Milestone creates Gant project charts and can be configured to find the critical path of a project. Two kinds of users will find Milestone helpful: project planners who are not yet using computers as planning tools, and planners who are disenchanted with their powerful project planning systems on minis or large frames. (*Organic Software®*)

Enumerator™

Enumerator adds variable line numbering abilities to documents created by WordStar. Enumerator allows you to number by line in any sequential pattern (ideal for attorneys, text writers and BASIC program writers). (*The Orthocode Corporation™*)

dBASE II™

dBASE II is a powerful, easy-to-use data management tool for constructing and manipulating numeric and character information files. A special feature of dBASE II is its own English-style program-building-language. You may SORT, EDIT, or DISPLAY a database directly from the keyboard, or write menus and programs to support your specific applications. (*Ashton-Tate, Inc.™*)

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Mailman™

Mailman creates and manages your mailing list. Formatted screen entry with eight different selecting criteria gives the Osborne user ease of access and entry, along with discrete listing capabilities. In addition, the program automatically sorts data by zip code and name. Mailman is designed to work with WordStar and MailMerge®. (*Standard Microsystems™*)

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This is an indexing program that works with WordStar to create an automatic text index or table of contents. Documate/Plus supports up to 8 levels of sub-indexing, and you can choose to index either words or phrases. (*The Orthocode Corporation™*)

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Spellguard is a computer program that helps the user to eliminate spelling and typographical errors in written materials prepared with WordStar. Two dictionaries are supplied with Spellguard: the first consists of 20,000 of the most frequently used words in the English language and the second contains 10,000 words and can be easily expanded to include technical vocabulary and/or foreign languages. (*Sorcim™*)

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Math*™

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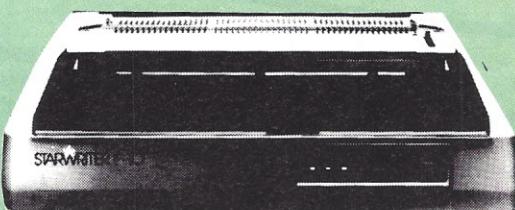


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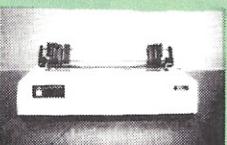
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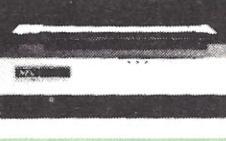
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Microplex is also presently setting up a retail distribution network for the Microbase I in Europe where the Osborne has proven to be popular. The desk is priced at \$595.

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Medical Bills

A new medical billing and accounts receivable package called **The Specialist** has been developed by Digital Marketing Corporation for five speciality practices. Versions designed for anesthesiology, family practice, internal medicine, radiology and surgery are available for either single doctors or multiple practices of up to nine physicians. All versions update files after each entry and are menu-controlled, with three levels of password control.

It gives the user flexibility in entering charges as units or flat fees for procedures. Billing and service dates are both kept on file for specialists who bill several weeks after a service. Payments may be posted on an open item or balance forward account basis.

The sole practitioner CBasic2 version sells for \$995. The multiple practitioner CBasic2 version goes for \$1295, while the sole or multiple practitioner CB-80 version retails for \$1495.

Digital Marketing Corp.
2670 Cherry Lane
Walnut Creek, CA 94596
(415) 938-2880

Advanced Switch

Advanced Systems Concepts, Inc., has created a **four-port intelligent switch** to enhance local area networking capabilities. The four-port expander allows single port units to interface with either multiple peripherals or computers.

Two variations include the Model AQ series that allows a single port to select or poll one of four output devices and the AMP series which allows four computers, modems or terminals to share a common unit, such as a letter-quality printer.

Networking applications are numerous. Examples range from networking four work stations to one printer to networking a modem to a multiple computer system. The input and output ports of the units can be controlled automatically by sending one of 128 user-selectable ASCII or EBCDIC codes. Thus, there is no need to have the unit physically next to you. A character can be imbedded in text or sent

from the keyboard. The control character and baud rate are selected via switches located on the rear of the unit.

The box weighs two pounds and comes in a 13.5 x 7 x 2-inch enclosure. Pricing information is available on request from the manufacturer.

Advanced System Concepts, Inc.
P.O. Box Q
Altadena, CA 91001



Kill That Surge

RKS Industries is now marketing a new electrical stabilizer, named the **Surge Sentry**, for \$89.50. Designed to protect computers from electrical surges, drops and noise, the device is said not to degrade the signal, no matter how many surges it kills. An indicator light is included to ensure operation is satisfactory.

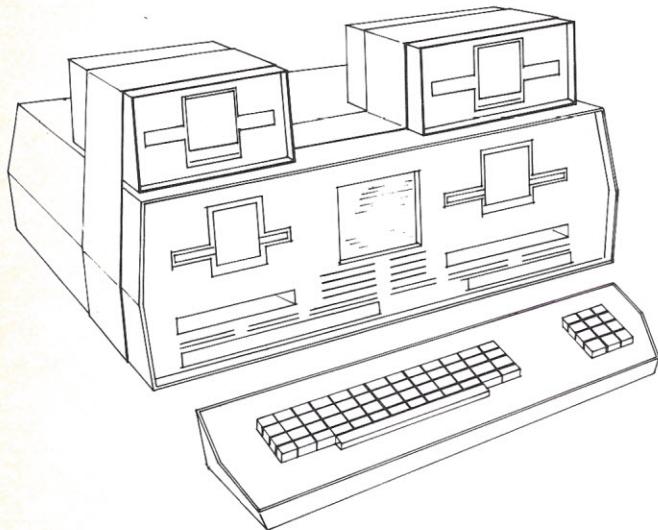
Surge Sentry works in parallel with power lines to shunt destructive surges in picoseconds. It triggers at 10 percent above nominal peak load.

RKS Industries, Inc.
4865 Scotts Valley Dr.
Scotts Valley, CA 95066

New User Reference Guide

The newest version of the Osborne *User's Reference Guide* is now available from your local dealer for \$17.95. The new edition is a great deal friendlier than earlier versions and the improved layout and graphics make it easy to find your answers quickly. The new guide

The Inevitable Enhancement.



Here's what it does...

- adds up to 384K bytes of ultra-fast RAM to your Osborne 1.
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Drive C™: has proved so useful to us that we figured it was inevitable word would get around and you would want it for your computer too. So if you want to double or quadruple your Osborne 1's storage and speed things up enormously as well, call us today and order your own **Drive C™:**

192K 01 Drive C: (equivalent to one double-density drive) \$395

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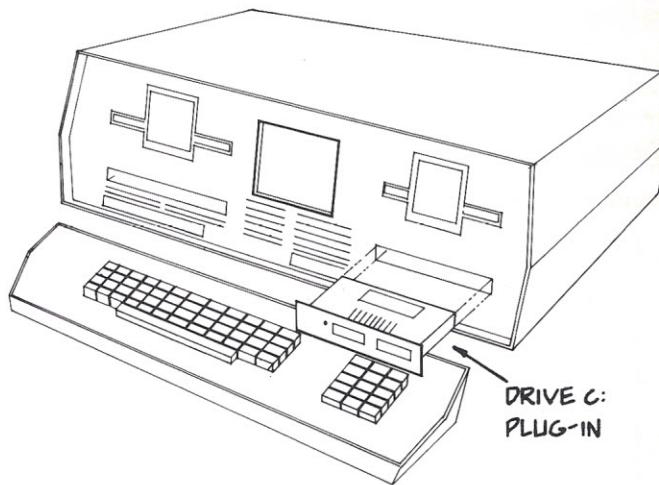
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Oakland, CA 94612
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1514 University Avenue
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(415) 865-6366

We needed to increase the disk storage of our Osborne 1™ computer beyond its standard 190K, so we asked our engineers to figure out a way to add two more double-density drives. As you can see the result wasn't quite what we really wanted. We insisted on something smaller, faster and less expensive, and sent the designers back to their drawing boards.

We're very proud of their second try. Now we have as much storage as four disk drives with amazingly fast access speed. We call it **Drive C™:**



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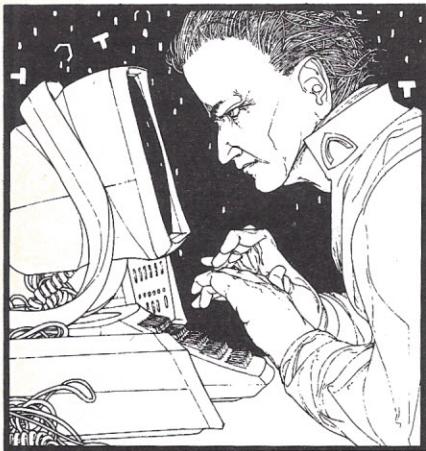
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Signature _____

incorporates the numerous suggestions for improvement received from Osborne owners all over the country. Order direct from your dealer.

New Wares from Mindware



Ducking ion torpedoes is only part of routine activities in two new arcade-style games available from Mindware. **Starbase Commander**

and **Robot Gladiators** run in fast machine language; instructions are on game disks and are part of the games.

Starbase Commander uses Osborne 1 graphics to show "Klang" alien battle cruisers maneuvering for attack. Firing fighters have two weapons, controlled by separate keyboard keys. The game incorporates a help screen. In **Robot Gladiators**, players seek freedom from increasingly hostile gladiator robots. Cost is \$19.95 for one game, \$35.95 for both, plus \$2 postage and handling per order. Orders to New York state should include local sales tax.

Mindware
Dept. PCN
P.O. Box 1718
New Rochelle, NY 10802

Software Filing

A software package from Compu-Draw called **Filer** will compact, archive and catalog disk files in CP/M-based systems. Available in several disk media formats,

including Osborne 1, eight-inch CP/M, Northstar, Apple II, Heath/Zenith, and Xerox 820, manufacturers claim **Filer** can result in disk space savings of several hundred percent.

The package optimizes disk space usage of both directory and data areas. For applications that result in many small files (6 Kbytes or smaller), savings in disk storage alone is said to justify the \$49 cost of **Filer**. Package is returnable within 15 days for a full refund. Place orders by telephone, or mail from:

Compu-Draw Software House
1227 Goler House
Rochester, NY 14620
(714) 454-3188

Number Cruncher

Digital Marketing Corporation has released a new financial planning system providing sophisticated analysis of worksheet problems. Called **Plan80**, the new program is being advertised as a financial interpreter capable of simplifying the

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most technical worksheet. The program prints to disk or uses a word processor to combine written text and reports.

Plan80 can also solve numeric problems that can be defined in worksheet format. It calculates averages, depreciations, ATANs, internal rates of return and trigonometry functions. Plan80 bears a \$295 price tag (\$45 for manual alone).

Digital Marketing Corp.
2670 Cherry Lane
Walnut Creek, CA 94596
(415) 938-2880

Take Two

In the Feb/Mar issue we ran the following new product listing with the incorrect address. We are repeating it to clear up any confusion.

The OS/TECH newsletter is published and edited by a Florida Osborne User Group and was designed to pass on helpful information on the Osborne 1 to other users. OS/TECH brings subscribers

information about the Osborne that the manual may not cover in depth. For the experienced user, hard-to-get information is supplied from more sophisticated sources.

Information is included about new products, software (both retail and public domain) and books. OS/TECH is published six times a year. Individual copies are \$1.50; \$9.00 for per year for U.S. subscriptions. International subscriptions are higher.

OS/TECH
P.O. Box 517
Clearwater, FL 33517

New Product information is derived from press releases sent to The Portable Companion by the producing companies. Statements of fact or opinion expressed in the New Product announcements that appear in this magazine are those of the producing company and have not been checked for accuracy by Osborne Computer Corporation. Before purchasing any of the products listed in this section, you are advised to check the validity of all claims made for the product.

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- Automatically checks file first to see if that record is already on file; if so, it displays all current information (including date entered and last updated) from up to three different files. You can then skip, edit, add a record, delete or recall, mark for future transfer, or even address an envelope.

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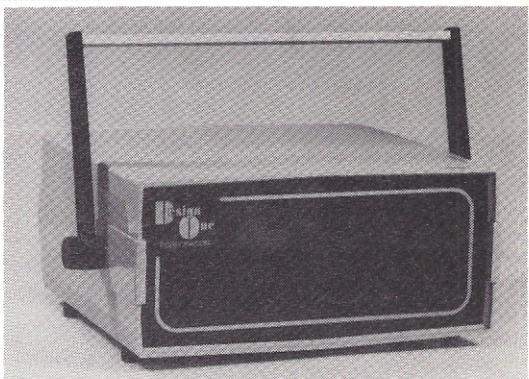
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WANTED SOFTWARE TESTERS

Osborne Computer Corp. is looking for Osborne 1 owners who will test the software packages we are evaluating for addition to our Approved Software list. We are committed to publishing only the best business and personal software. You will be learning and testing the latest software and documentation that we have reviewed.

To qualify, provide us with your name, address, business expertise, the types of software of interest to you, what software you currently use, and your level of experience with computers. Also tell us whether you have double-density disk drives or 80-column screen upgrade on your Osborne 1.

OSBORNE COMPUTER CORP.
BETA TESTING
31285 San Clemente St.
Hayward, CA 94544

You've just opened up a computer consulting business, and your first customer wants his Nec 8023 (same as C.Itoh 8510) dot matrix printer installed for full print controls. The print control codes are supplied here. Gathering information from this and previous issues, how would you:

- Toggle on compressed or 12 pitch from *SuperCalc*'s or *WordStar*'s keyboard
- Temporarily set the line feed to 1/8 inch line feed with *SuperCalc*
- Permanently install compressed and bold face print in *SuperCalc* (different diskette)
- Access the printer's graphics underline in *WordStar*
- Supply any left margin for a spreadsheet
- Program a function key to boot up *WordStar* with right margin set at 60, tabs at 10 and 30, help message at 2, and justification off

Patch *WordStar* using INSTALL so it boots up under these conditions:

- Pause between pages is ON
- Omit page numbers (.OP)
- Use a page offset of 12 (.PO 12)

Print Control Code Chart

Command	Hexidecimal Data	Description
ESC N	1B 4E	1Ø pitch
ESC E	1B 45	12 pitch
ESC Q	1B 51	17 pitch
ESC A	1B 41	1/6 line feed
ESC B	1B 42	1/8 line feed
ESC !	1B 21	Boldface on
ESC "	1B 22	Boldface off
ESC X	1B 58	Start 9th wire underline
ESC Y	1B 59	End 9th wire underline
	8Ø	Graphic underline
ESC L n2n1nØ	1B 4C n2n1nØ	Left margin set Ø2Ø = left mar 2Ø Ø15 = left mar 15

This puzzler covers a lot of advanced territory and serves as a "final exam" for several commonly-asked questions discussed in this and the previous three issues. It examines your knowledge of *SuperCalc*'s SETUP option, *WordStar*'s print patch/customization addresses, Osborne's special function keys, DDT, INSTALL, INSTALLS (*SuperCalc*) and how to interpret print control codes. Access to a Nec 8023 or C.Itoh 8510 is not necessary to solve this puzzler.

If there is more than one solution for a given problem, suggest them all. Your "customer" will want to know all available options.

After you have written down the necessary modifications, try setting up your own printer in a similar fashion. The printer hex codes may be different and some features impossible to enable, but the principles are the same.

The answers will be published in the next issue.

And the answer to Puzzler #6 is...

<i>Line #</i>	<i>Error Description</i>
2	A number should follow the .MT command.
5	PUZZLE.DTA should be PUZZLE.DAT.
6	ZIP# is an incorrect variable. The pound sign (#) is a reserved function and cannot be used in an .RV command. Did you see the "**** Invalid variable name in .RV command ignored" message flash on the screen?
13	Comma missing after display message.
21	ADDR should be ADDR1.
26,27,28	The flag field "<" symbol indicates that hard carriage returns were used—an error that results in grossly uneven right margins if the data variables are long. Always keep "wordwrap" turned on.
29	The \$ is inverted with the &.
40	An extra carriage return (note the flag symbol) at the end of a file results in one blank page being spitted out by the printer for every record used.
41	The spacebar operation at the end of the file prints the first dot command (.OP), starting with Susan's name and address data.
43,45,47	Flag field indicates that this data file was created in the document mode instead of non-document mode.
44	Swank Cinema, Inc. should be enclosed by quotes.
22,(47)	Two commas in a row indicates that a piece of data (the zip-code here) is missing and should be ignored. That's okay, but line 22 should be changed to &ZIP/0&.

And last on our list is the toughest problem. Error #13: The printer stops mid-way during the printing of the invoices leaving Manny with a half-printed invoice stuck in the printer. This problem appears to be tied into the size of the printer's buffer. Printers without buffers can duplicate the error readily. Printers with buffers will not have this problem occur with text as short as Manny's invoice; however, it could be made to fail with longer text. If you did not catch this error, take heart that your printer has a decent buffer. (Check it out on an Epson or Okidata—line printers have no buffers.)

The screen message commands interrupt the printing process and printing resumes when the next record is accessed. Here's a trick to annihilate this annoyance: Create a blank dummy non-document file (the file is saved with nothing in it) and call it up on line #37 using the .FI command, e.g.:

.FI JUNKFILE

The diskette access slows down the computer so the printer catches up. Without it, the computer and printer become out-of-sync by increasing amounts as each new record is used. With sprocket-fed forms, the problem is not as apparent; however, remember that the puzzle stated Manny's invoices were "individually fed" (NOTE: do not bother with the "pause between pages" command—keep it at its normal default setting). Consequently, after the "paused" invoice finishes printing, the beginning of the next invoice has nothing to print on.

Brad Baldwin

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Letters

continued from page 14

about the Reaction Time program was, to me, both clear and educational. Thanks.

Soaring Bear
Tuscon, AZ

Beep in the Night

It is about 11 p.m. in the Interstate Budget Motel in Duluth, Minnesota, and I am composing this using WordStar and my Osborne computer, which only minutes ago I accidentally dropped down an entire flight of concrete and steel stairs.

I am in the home building business and use my Osborne continuously for pricing, estimating, word processing and maintenance of lead and customer files. I was returning from an appointment when the accident occurred. Under one arm I was carrying my case, appointment book and a box of diskettes. I was carrying my Osborne with the other hand.

I was tired. It was snowing. As I reached the top of the stairs the materials I was carrying under my arm began to slip. In an effort to catch them I swung around with my hand that was gripping my Osborne. Before I knew it, I had lost my grip. All I could do was watch my most prized possession tumble head over heels down 15 concrete and steel-edged steps onto the parking lot below.

As it fell the keyboard became unlatched and remained attached only by the coiled cord and when at last the tumbling had ended, the keyboard was draped grotesquely over and behind the body of my Osborne. The shift key and space bar were missing, the sliding vent door was off, the latch peg under the RS232 port had broken off, as had the contrast knob. I had heard a story at the last Twin Cities Osborne Group (TCOB) meeting about someone who had "rolled" his car without seriously damaging his Osborne because the doors to

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the disk drives has been closed. Since then I always closed those doors before I closed the machine. As I picked up the remains of my machine I noticed that both doors had been jarred open. I held little hope that my Osborne would still be functional.

I found the missing space bar, shift key and vent door and put them back where they belonged. I sent the computer up on a small table in my motel room and plugged it in. I turned it on. It went beep. I inserted my SuperCalc diskette in Drive A and hit return. SuperCalc loaded like nothing had ever happened. I inserted a diskette in Drive B on which I had stored the file from the appointment I just had. I loaded that file and up it came like magic.

As far fetched as this story may sound, it is entirely true. I am absolutely amazed and flabbergasted by your product. This experience makes those Timex and luggage commercials child's play. It is a testimony to the highest levels of quality and performance beyond any expectation I could have as a consumer.

John Watters
Lakeville, MN

WE Were Bugs, Charles

(In reference to a poem published in the Feb/Mar 83 issue titled 'Were you "Bugs" Eugene') I was pleased to have my poem published. It interested several of my friends in the Osborne computer. One of them is a real writer.

One problem, however, I would like to bring to your attention. The last line of the poem was completely omitted. The last line read:

"In the shadow mode."

Would you please note the correction in some future issue? Thank you very much.

Charles E. Moller, Jr.
Wethersfield, CT

We're sorry about that, Mr. Moller. We don't know how it happened. Seems we were in the shadow mode ourselves.

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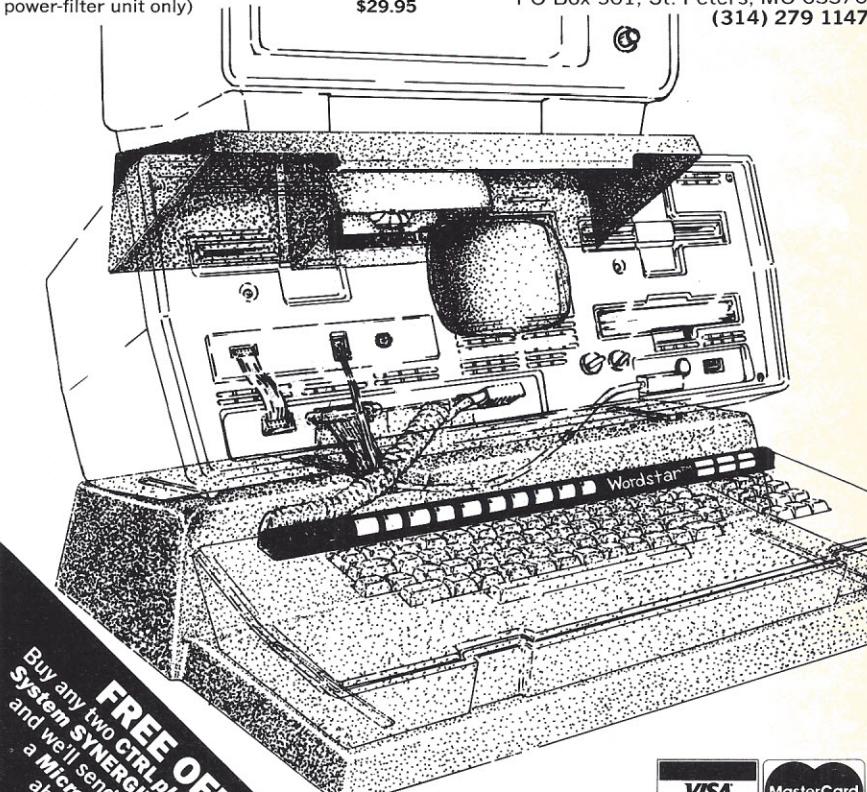
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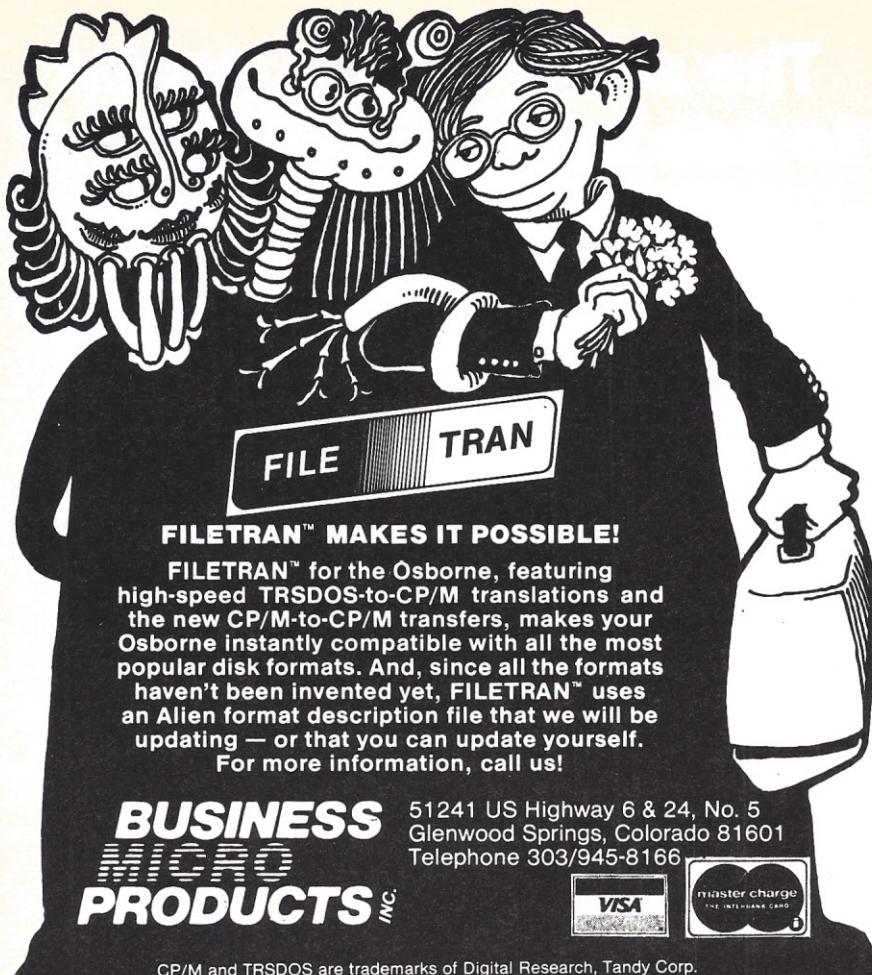
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However—as stated below the advertisers' index in each issue—we do monitor complaints concerning advertisers and want to hear from anyone having a problem with a supplier that appears to be unresolvable.

*It may reassure you to learn that in our first year of publishing the magazine we've been contacted for this reason in only two instances.—Deanna D'Zamba,
Advertising Manager.*

```

; DIM.ASM
;
;
; CPM EQU 00H
SCREEN EQU 0EFFFH
STODIM EQU 015DH

ORG 0100H
LHLD 01H
MVI L,36H
SHLD JUMP
LXI H,SCREEN
LXI D,STODIM
LOOP INX H
MOV A,M
ANI 07FH
MOV B,A
CALL ROMJMP
MOV A,H

ORA L
JNZ LOOP
JMP CPM

ROMJMP:
DB 0C3H

JUMP:
DS 2
END

;
; By Phil Jones and Shahria
; Osborne Computer Corporat

```

The Wizard

Continued from page 25

Q: How is the DIM/Bright video attribute controlled with assembly language programming? The half intensity routine on page 274 in the spiral bound Osborne 1 User's Reference Guide does not work. The OUT 2 instruction switches to bank three and suddenly your program has nowhere to run because banks one and two are switched off; the program crashes every time.

A: Accessing the 9th bit video attribute RAM by switching to bank three does not work due to timing problems; however, a proper assembly language procedure can be found in the current release of the User's Reference Guide. Here's the basic information:

Perform a BIOS call to the

ROM's dim routine STODIM. To call the ROM, the D&E registers must hold the STODIM address 015Dh (STODIM is at 015Dh in all 0-1 ROMS). The STODIM routine requires that the address of the pertinent screen location be in the H&L registers and the 8 bit contents of that location be in the B register. "AND" the contents of the screen

location with 07Fh for dim; "OR" the location with 80h for bright. The ROM jump (ROMJMP) address for double density is 0E136h; single density is 0E536h.

Because seeing is believing, Phil Jones and Shahriar Kiarnersi of OCC wrote the following assembly program to demonstrate this method of controlling the video attribute. Their simple program dims the entire screen and was written to handle both single or double density computers without changing or adding to the code.

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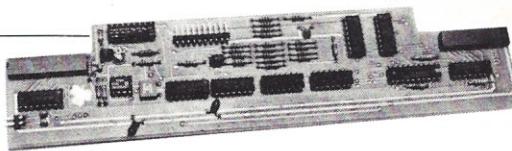
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Next Time

The July issue of the *Companion* focuses on:

- interfacing the Osborne with scientific test equipment
- using the computer in the film industry.
- an article on interfacing your computer to a joystick for games or connection to external devices
- the debut of a new column targeted to beginning users
- converting the TRS-80 PRINT@ statement

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Sources

GRAPHICS SOFTWARE

All of the following graphics software packages write Osborne graphic characters to the screen and save the "drawing" to the diskette in a format compatible with various languages. As this is being written, many of the companies are working on improvements and enhancements to their software. We intend to review and compare software and hardware graphics manufacturers in an upcoming issue of the *Companion*.

In addition to the standard features found in graphics packages, *Artist* has a computer-generated art routine. According to the manufacturer, the alphanumeric character set has been improved over early versions of *Artist*.

From menus, *GRAFIKS* generates bar graphs, pie charts, point plots, superimposed graphics, and prints to screen or many popular dot matrix printers. Reads *CBASIC* and *SuperCalc* files. Allows access to Osborne graphic set. Robonics is releasing *GRAFIKS* 2.0 with high resolution features.

Formerly distributed and manufactured by Wizard of OZZ, *Osboard 1* has recently been acquired by Osborne Computer Corporation. (See page 78 of the Feb/Mar issue for a product review.) Writes graphics to the screen or dumps to a wide variety of dot matrix printers. Saves to the disk in formats compatible with *BASIC* and assembly languages.

Utilizes the Osborne graphics set. Performs block moves, block copies, and comes with a 63 page manual. Ruff has released *Supergraphics Mate*—an Epson printing package that adds \$10 to the base price.

Artist
Portable Software
216 Penn Avenue
Oxford, PA 19363
(215) 932-4247
\$21.95

GRAFIKS
Robonics
901 Manhattan Avenue
Hermosa Beach, CA 90254
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Osboard 1
Osborne Computer
Corporation
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Strobe Graphics System
Strobe
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